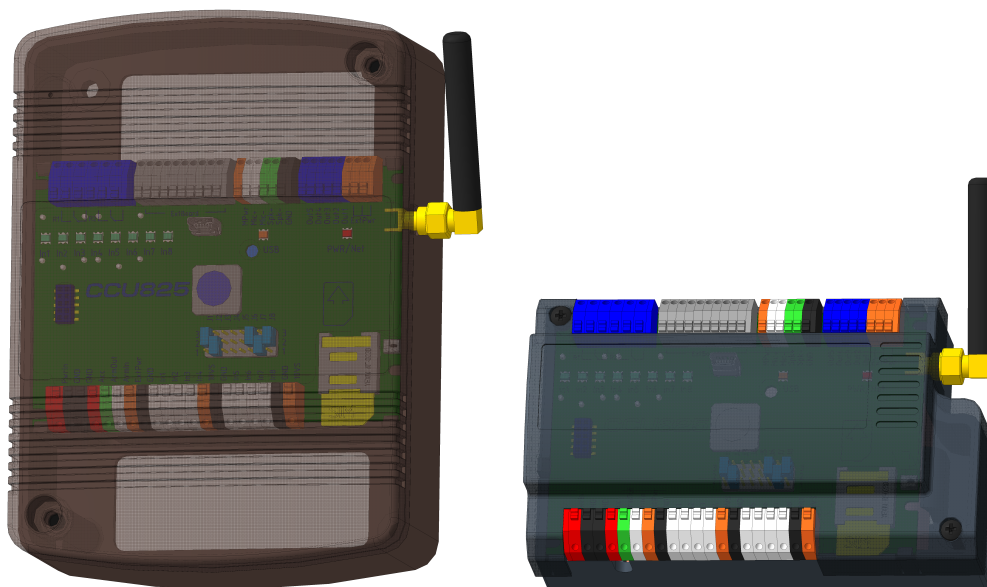


The General-Purpose GSM Controller

- Configuring the controller over the Internet and USB with a web browser
- Control and notifications with Viber and Telegram on any smartphone, tablet, and PC
- Control and notifications with voice call and SMS
- Up to 8 users
- Up to 4 security areas*
- 16 discrete and analog sensor inputs*
- 2 relays and 5 actuator outputs
- Built-in Touch Memory DS1990A key controller
- Built-in battery* and charger
- Two enclosure types: wall-mounted, DIN rail-mounted*
- External GSM antenna
- Alarm, information, test, and system events user notifications
- Scheduler to perform user-defined actions at specified time
- Scenarios to activate the relays and the outputs for control actuators
- Extra user list on 4000 entries to control gates and access barriers*
- PLC feature (programmable logic controller)*
- Custom integration with third-party software via HTTP JSON API
- RTD thermal sensors support for air and in-pipe heat transfer fluid temperature monitoring

- Analog interface to connect an external intercom
- RMA microphones support as a part of an external intercom
- Extension boards to increase the number of inputs and extend functionality*

*Depends on the modification/configuration

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1 Introduction

The manual describes the functionality of the CCU825 GSM controller. Please read and understand the manual before configuring the device.

1.1 Scope of delivery

Please check the scope of delivery against the list on the box. If any components are missing, please contact your place of purchase.

1.2 Terms and definitions

System events: events generated as the controller operating parameters exceed the critical values, or go back to normal. For example, main power loss or recovery, battery discharge, main board temperature change, controller case opening, balance reduction.

Alarm events: events generated as the inputs enter active state, or as the controller operating parameters exceed the critical values.

Information events: events generated by the scheduler to notify the users about the controller I/O status.

Test events: events generated by the scheduler to notify the users about the status of controller operating parameters. For example, main power, battery charge, arming mode, main board temperature, controller case, balance.

Current limited output: an output with overcurrent protection. If the current exceeds the maximum value, the circuit is off until the failure is cleared.

Scenario: a user-defined rectangular signal at the controller outputs with the ability to set the initial level and duration of the on and off state in increments of 100 ms. The scenario can be one-off, cyclic, and infinite. For cyclic scenario, the number of cycles can be specified.

PLC: programmable logic controller. The PLC functionality allows custom control logic to be implemented with the easy-to-use EXT programming language.

CCU Proxy: the program to work with the controller over the USB.

CCU Shell: the controller web-based configurator accessible over the Internet, or over the USB with a web browser.

CCU Robot bot: the cloud-based application for Viber and Telegram to control the controllers on smartphones, tablets, and PCs. CCU Robot bot has a user-friendly graphical interface, easy to use, and does not require to install any extra software.

: this icon marks special features of the controllers with the E01.1 inputs extension board installed.

1.3 Warnings

- *When the SIM card is inserted in the controller, all text messages on the card will be deleted.*
- *If the PIN code specified in the controller configuration does not match the SIM card PIN code, upon every power-up a single wrong PIN code entry attempt will occur. After three unsuccessful attempts, the SIM card will be locked. To unlock a temporarily locked SIM card is possible only with the PUK code (8 digits). To enter the PUK code, remove the SIM card from the controller and insert it into a mobile phone. You have 10 attempts to enter the PUK code.*

2 Key features

The CCU825 GSM controller primary applications are:

- GSM security alarm for houses, garages, offices, warehouses, and apartments.
- Control of heating boilers and convectors.
- Control of gates and access barriers.
- Smart home automation.

2.1 Capabilities

Configuring the controller over the Internet and USB with a web browser. You can configure the controller, update its firmware, change the voice messages over the Internet or over the USB with a web browser. A static IP is not required. For Internet access, the <https://ccu.sh> manufacturer relay server is used. Relay server <https://ccu.sh> uses secure user-to-controller connections only. For USB access, the CCU Proxy program is used. It is available for Windows, Linux, and macOS.

Control and notifications with Viber and Telegram on any smartphone, tablet, and PC. You can control the device and receive its notifications with the Viber and Telegram bots. The bots have a user-friendly graphical interface and are available on any smartphones, tablets, and PCs that run Viber or Telegram.

Control and notifications with voice call and SMS. The voice assistant of the controller allows the user to control and receive notifications using the dialing keypad keys (DTMF) during an established voice connection. It is also possible to control and notification with SMS.

Up to 8 users. The controller supports up to 8 users. Each user can control and monitor the device over the phone or the Internet. Administrator privileges can be granted as required. A user with such access rights can configure the controller with a web browser. Each user has individual settings for the notification method, the set of monitored inputs, etc.

Up to 4 security areas. You can individually secure up to 4 areas. For example, to secure only the house yard at nighttime.

16 discrete and analog sensor inputs. The general-purpose analog measurement inputs support the standard 0...10 V/4...20 mA range, and can be connected to wide range of household and industrial sensors of different types. For example, temperature sensors, pressure, humidity, liquid level, leak, motion, fire sensors, relay output sensors (dry contact), etc. It is possible to connect smoke detectors directly by a two-wire circuit with automatic power reset upon activation.

2 relays and 5 actuator outputs. The controller has 2 relays: 28 V/10 A, and 5 open collector outputs. The relays and outputs can control various actuators. For example, heating boilers, convectors, light and acoustic security and fire annunciators, electrically driven valves, gates and barrier bars, interior lighting, etc. Use an intermediate relay to control high loads!

Built-in Touch Memory DS1990A key controller. This function allows you to use contact keys, contactless readers, and code keypads compatible with the Dallas 1-Wire DS1990A format.

Built-in battery and charger. Upon the main power loss, the built-in battery powers the controller for up to 24 h. The built-in charger automatically charges the battery to the required level when the main power is available. A higher capacity external battery can be connected to replace the built-in one.

Alarm, information, test, and system events user notifications. For example, main power loss or recovery, battery discharge, main board temperature change, controller case opening, balance reduction, etc.

Scheduler to perform user-defined actions at specified time. Scheduler allows you to change the arming mode, send reports, turn on relays, perform scenarios to create a presence effect, apply profiles, etc. according to a schedule.

Scenarios to activate the relays and the outputs for control actuators. With this function, you can generate specific pulse sequences at the controller outputs to control beacons and sirens, to create a presence effect in the room by controlling the lights, to startup a diesel generator, etc.

Extra user list on 4000 entries to control gates and access barriers. With the list, you can control access to an apartment complex or office building parking.

PLC feature (programmable logic controller). The PLC functionality allows custom control logic to be implemented with the easy-to-use EXT programming language. The programming tools are built into the controller and are accessible with a web browser.

Custom integration with third-party software via HTTP JSON API. HTTP JSON API allows you to control the device and monitor its status over the Internet using the relay server <https://ccu.sh>, or over the USB using the CCU Proxy program and LAN access.

RTD thermal sensors support for air and in-pipe heat transfer fluid temperature monitoring. There are two RTD sensor types available: with a wall-mounted enclosure to monitor air temperature indoors and outdoors, and with a pipe clamp to monitor the heat transfer fluid temperature.

Analog interface to connect an external intercom. The analog interface allows you to connect to the controller a standard phone handset or microphone with a speaker to establish two-way voice communication.

RMA microphones support as a part of an external intercom. The RMA microphone with two amplification levels is intended to operate as part of an external intercom.

Extension boards to increase the number of inputs and extend functionality. Controller functions extension boards allow to increase the number of inputs to 16, to provide a more detailed controller status indication, etc.

2.2 Specifications

Main power

Main power voltage at PwrIn: +11...16 V. To charge the backup battery, the lower limit must be at least 14.8 V.

Current consumption at 15 V main power voltage:

- In standby mode: up to 35 mA.
- Voice call in progress: up to 100 mA.

E01.1
16 inp.

With the inputs extension board installed, the controller current consumption is about 1 mA higher.

Backup battery and charger

The maximum charging current of the built-in backup battery charger is 0.35 A.

The backup battery options are:

- A compact-size lithium iron phosphate LiFePO₄ battery (12.8 V; 1.5 A·h) installed in the controller enclosure under the main board.
- A lead-acid Pb (12 V; 3.5...7 A·h) battery installed outside the controller enclosure.

A lead-acid battery with a capacity of more than 7 A·h can be used as a backup battery. In this case, its charging time to 100 % will be increased in proportion to the increased capacity.

Upon the main power loss, the controller is switched over to the backup battery. The built-in battery overdischarge protection circuit with a hardware shutdown threshold of 10.5 V will automatically turn off the controller when battery is discharged to this level to save battery life.

Note that the built-in LiFePO₄ battery can power the controller at subzero temperatures, but it can be charged only when the ambient temperature is at least +4°C. If the controller is operated in unheated room, a lead-acid battery is recommended. Choose the appropriate battery type in the service menu.

GSM module

- Frequency bands: 850/900/1800/1900 MHz.
- Transmitting power: Class 4 (2 W at 850/900 MHz), Class 1 (1 W at 1800/1900 MHz).
- GPRS connectivity: Class 12.
- Antenna connector type: SMA.

Built-in 8 analog inputs (In1-In8)

- Voltage measurement range: 0...10 V.
- Current measurement range: 0...20 mA. You must use a 500 Ohm external resistor connected directly to the controller terminals between the input and GND.
- Maximum voltage at the inputs: ± 30 V.
- Hardware modes (selectable with the jumpers on the main board): +10 V loop-powered, +5 V low current bias, bias-free measuring input.

E01.1
16 inp. 8 extra inputs (In9-In16) have similar specifications but support only one hardware mode: +5 V low current bias.

Built-in 2 relays (R1-R2)

Maximal specifications: 28 V/10 A.

Built-in 5 open-collector outputs (Out1-Out5)

Maximal specifications: 15 V/0.1 A. From the hardware version 14.01 and up, the Out1-Out2 controller outputs have enhanced specifications: 15 V/0.2 A.

ExtPwr output

The ExtPwr output voltage equals the controller main power voltage, or the backup battery voltage, whichever is higher, minus 0.3 V. Maximum current is:

- 0.2 A for the 10.01 hardware version;
- 0.35 A for the 10.02 hardware version;
- 0.5 A for subsequent hardware versions.

10VS output

Voltage: 10 V. Maximum current is: 0.2 A. The 10VS output voltage is controlled by the controller logic and can be disabled. The voltage is stabilized and does not depend on whether the controller is powered with the main power or the backup battery.

USB Mini-B port

When no other power sources are available, the controller is powered by the USB port in a reduced functionality mode. For instance, the GSM module is disabled. The USB power mode is intended for the controller setup only.

ArmIn input

The input has a 3.8 V low current bias. The maximum voltage is ± 30 V.

ArmOut output

When output is on, the ArmOut output voltage is equal to the ExtPwr output voltage. Maximum current is 0.1 A.

Do not connect a LED directly to the ArmOut output without a limiting resistor! Use a 1 KOhm, 0.125 W limiting resistor.

Operating conditions

- Temperature range: -30...+55 °C.
- Humidity: 5...85 %.

2.3 Controller enclosure options

The CCU825 GSM controller is available with two types of enclosures:

- wall-mounted;
- DIN rail-mounted.

The removable top cover is semi-transparent to monitor the controller board indicators.

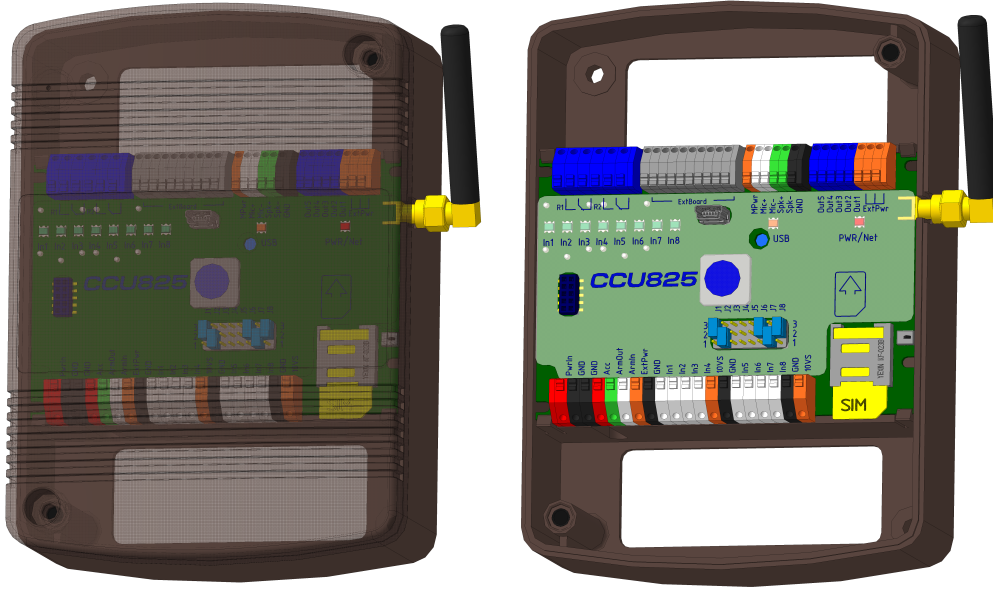


Figure 1: Overall view of the controller with wall-mounted enclosure.

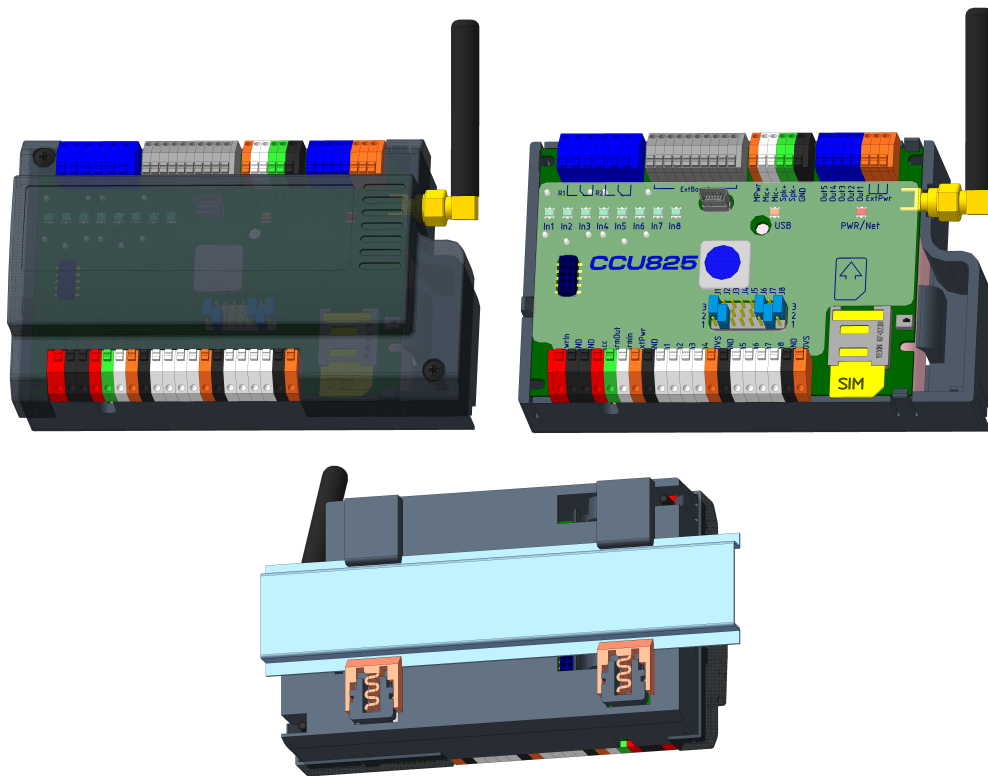


Figure 2: Overall view of the controller with DIN rail-mounted enclosure.

2.4 Overall and mounting dimensions

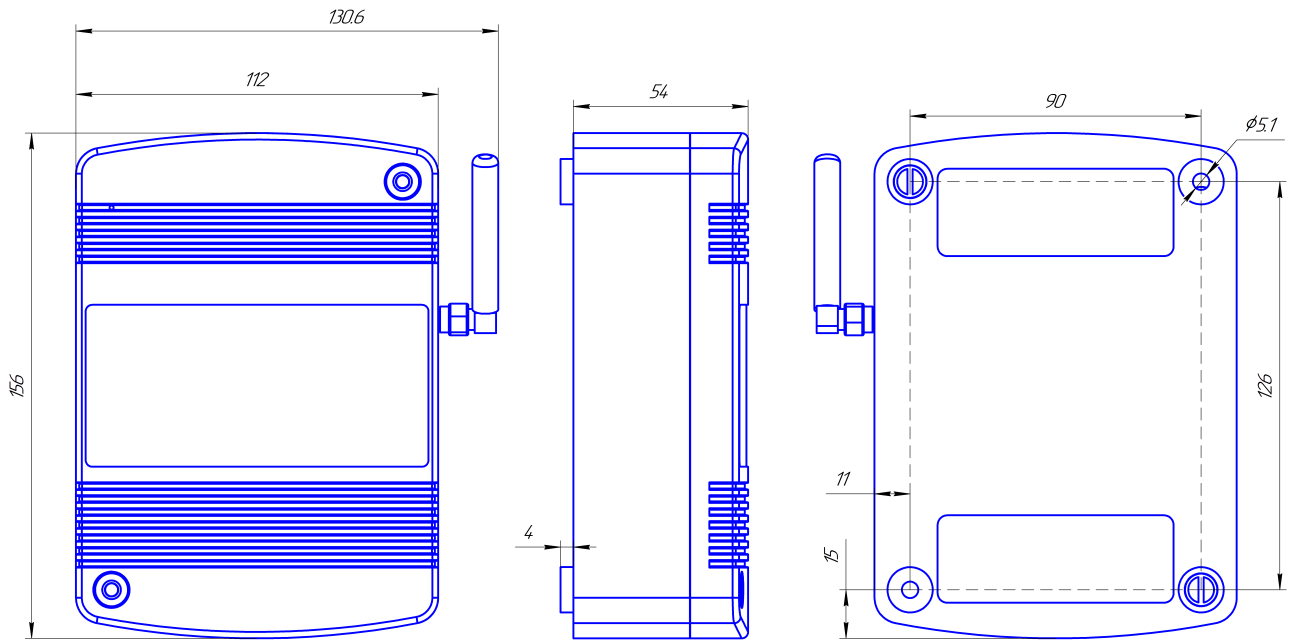


Figure 3: Overall and mounting dimensions of the controller with wall-mounted enclosure

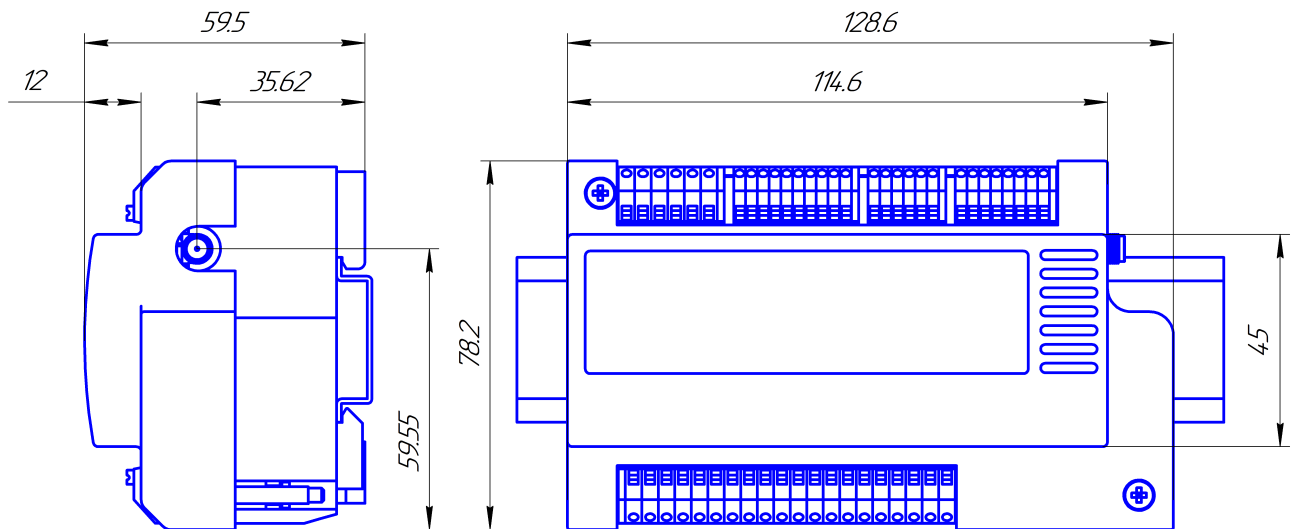


Figure 4: Overall and mounting dimensions of the controller with DIN rail-mounted enclosure

GSM network status indication

The PWR/Net indicator shows the GSM network status with flash sequences:

- constantly on: the controller is not registered on the GSM network;
- single flashes every 0.5 s: the controller is registering on the GSM network;
- single flashes every 4 s: the controller is registered on the GSM network, waiting;
- single flashes every 2 s: a user is called for voice messaging;
- 2 flashes (period 0.5 s) every 2 s: connection is established, the user's phone is ringing, or there is an incoming call from any phone number;
- 3 flashes (period 0.5 s) every 2 s: incoming or outgoing voice connection is established;
- 4 flashes (period 0.5 s) every 2 s: Internet connection is established.

Error codes indication

The controller runs self-diagnostics upon powering up or resetting. If an error is detected, the PWR/Net indicator in orange shows the error code in the form of a repeating sequence of short flashes and a long pause. The number of flashes in a sequence is the error code:

- 2 flashes: the FLASH memory chip error;
- 7 flashes: the second phase of a firmware update process failed; restart the update.

3.3.2 In1-In8 indicators

Depending on the configurator settings (refer to the "Indication" group, "System parameters" page) the In1-In8 indicators can display the following:

- In1-In8 inputs status (when the LED is on, the input is active);
- In9-In16 extension board inputs status (when the LED is on, the input is active);
- past inputs activity (single flashes every 0.3 s);
- GSM signal strength.

3.3.3 USB indicator

The USB indicator shows the USB-to-PC connection status. When the LED is on, the connection is active.

4 Controller power

There are three controller power options: main power, battery, USB.

When the power voltage is insufficient, the controller enters the low-power mode. In this mode:

- the relays and outputs are disabled to avoid accidents;
- the inputs are not scanned to avoid false alarms from sensors with insufficient power;
- the controller is unregistered from GSM network;
- the In1-In8 indicators turn off.

When the voltage at the PwrIn terminal (main power) is over 11 V, the PWR/Net indicator is green. This voltage is sufficient for the controller to operate, but to charge the battery to its 100% capacity at least 15 V power voltage is required. It is recommended to use the power supply unit supplied.

When the main power is off, and the battery charge is sufficient (50...60 %), the PWR/Net indicator is red. As the battery charge drops to nearly 0 %, the controller enters to the low-power mode. When the battery is drained even more, the hardware protection completely turns off the controller. After that, the controller can be turned on only upon recovering the main power. **Switching over to the backup battery will be possible only when the battery charge reaches 50...60 %.**

When the primary power and battery is off, but the USB port is connected, the PWR/Net indicator is orange. In this mode, only the controller configuration over USB is available. The inputs voltage will not be displayed in the configurator. Connect the main power to get the actual readings. The configurator functionality to test control the relays and the outputs will not operate.

When more than one power source is connected, the highest priority source is selected, and it is displayed on the PWR/Net indicator. The power source priority from highest to lowest:

1. Main power: high priority, green LED.
2. Battery: medium priority, red LED.
3. USB port: low priority, orange LED.

5 Arming modes

5.1 Single area controller mode

In the single area mode, the controller supports three arming modes: ARM, PROTECT, and DISARM. The current arming mode is maintained upon power loss and controller rebooting. The arming mode can be indicated with a light annunciator connected to the ArmOut output. The arming session begins upon switching to the ARM or PROTECT mode, and ends upon switching to the DISARM mode. In any arming mode:

- the controller notifies users about information, test and system events;
- the controller notifies users about alarm events at the inputs with all-day monitoring enabled;
- the users can query the status of sensors and system.

5.1.1 DISARM mode

The ArmOut output is passive in the DISARM mode.

As the ArmIn input is activated, the system can switch over from the ARM or PROTECT mode to the DISARM mode.

For inputs, you can set the delay of alarm events generation. If an activity was detected at these inputs, but the delay time at the moment of switching over to the DISARM mode has not expired, the alarm event is not generated. This can be useful in cases where the arming button (or Touch Memory key reader) is in the armed area. Thus, the owner can disarm the object without generating the alarm.

When the system is in the DISARM mode, and the disarm command is issued (e.g., the SMS command “DISARM”), the command is ignored.

5.1.2 ARM mode

The ArmOut output is active in the ARM mode. The controller notifies users about alarm events at all enabled inputs.

As the ArmIn input is activated, the system can switch over from the DISARM mode to the ARM mode. If the arming delay is set, the countdown begins, accompanied by pulses with a period of 1 s at the ArmOut output. When the ARM mode is activated without using the ArmIn input, no countdown occurs. Upon completion of the countdown, the system switches over to the ARM mode.

The ArmIn input cannot be used to switch over from the PROTECT mode to the ARM mode.

If during switching over to the ARM mode the enabled inputs are active (e.g., there is a sensor fault), the alarm is generated.

When switching over to the ARM mode using the ArmIn input, the controller scans the inputs that have their “Do not switch over to the ARM mode if the input is active” setting on. If any such input is active, the controller stays in the DISARM mode and indicates the input number with the number of flashes at the ArmOut output. This condition is ignored, when the system is switched over to the ARM mode for other reasons.

When the system is in the ARM mode, and the arm command is issued (e.g., the SMS command “ARM”), the command is ignored. To re-activate the ARM mode, first switch to the DISARM mode, and then to the ARM mode. The SMS command example: “/pass DISARM ARM”.

5.1.3 PROTECT mode

The ArmOut output is activated every 2 s in the PROTECT mode. The controller notifies users about alarm events at the inputs assigned to the PROTECT mode. In the PROTECT mode, unlike to the ARM mode, the partial protection of the object is possible. For example, if there are people in the house, you can protect the yard or the ground floor, leaving the place where people are present without protection.

As the ArmIn input is activated, the system can switch over from the DISARM mode to the PROTECT mode. The Touch Memory key cannot be used to switch over to the PROTECT mode. When the PROTECT mode is activated, no countdown occurs.

The ArmIn input cannot be used to switch over from the ARM mode to the PROTECT mode.

If during switching over to the PROTECT mode the enabled inputs are active (e.g., there is a sensor fault), the alarm is generated.

The system will not switch over to the PROTECT mode, if there are no inputs assigned to this mode. In this case, commands are ignored.

When switching over to the PROTECT mode using the ArmIn input, the controller scans the inputs that have their “Do not switch over to the ARM mode if the input is active” setting on. If any such input is active, the controller stays in the DISARM mode and indicates the input number with the number of flashes at the ArmOut output. This condition is ignored, when the system is switched over to the PROTECT mode for other reasons.

When the system is in the PROTECT mode, and the protect command is issued (e.g., the SMS command “PROTECT”), the command is ignored. To re-activate the PROTECT mode, first switch to the DISARM mode, and then to the PROTECT mode. The SMS command example: “/pass DISARM PROTECT”.

5.2 Multiple area controller mode

In the multiple area mode, the controller supports up to 4 security areas. Each security area supports two arming modes: ARM and DISARM. The current arming mode is maintained upon power loss and controller rebooting. The first security area arming mode can be indicated with a light annunciator connected to the ArmOut output. The 2-4 security area arming modes can be indicated with light annunciators connected to the outputs 1-3. The arming session begins upon switching to the ARM mode, and ends upon switching to the DISARM mode. In any arming mode:

- the controller notifies users about information, test and system events;
- the controller notifies users about alarm events at the inputs with all-day monitoring enabled;
- the users can query the status of sensors and system.

As the ArmIn input is activated, the ArmOut output (outputs 1-3) generates frequent flashes with period 200 ms. The flashes are generated while the Touch Memory key is touching the reader, or the button is being pressed, but no longer than 3 s. The flashes on the area status indicators are generated even if the Touch Memory key is not assigned to any of the security areas. They show to other users that the line is busy, and they should wait till the flashing stops.

5.2.1 DISARM mode

The ArmOut output (outputs 1-3) is passive in the DISARM mode.

As the ArmIn input is activated, the area can switch over from the ARM mode to the DISARM mode.

For inputs, you can set the delay of alarm events generation. If an activity was detected at these inputs, but the delay time at the moment of switching over to the DISARM mode has not expired, the alarm event is not generated. This can be useful in cases where the arming button (or Touch Memory key reader) is in the armed area. Thus, the owner can disarm the object without generating the alarm.

When the area is in the DISARM mode, and a the disarm command is issued (e.g., the SMS command “DISARM”), the command is ignored.

5.2.2 ARM mode

The ArmOut output (outputs 1-3) is active in the ARM mode. The controller notifies users about alarm events at the inputs assigned to the security area.

As the ArmIn input is activated, the area can switch over from the DISARM mode to the ARM mode. If the arming delay is set, the countdown begins, accompanied by pulses with a period of 1 s at the ArmOut output

(outputs 1-3). When the ARM mode is activated without using the ArmIn input, no countdown occurs. Upon completion of the countdown, the area switches over to the ARM mode.

If during switching over to the ARM mode the inputs assigned to the security area are active (e.g., there is a sensor fault), the alarm is generated.

When switching over to the ARM mode using the ArmIn input, the controller scans the inputs assigned to the security area that have their “Do not switch over to the ARM mode if the input is active” setting on. If any such input is active, the area stays in the DISARM mode and indicates the input number with the number of flashes at the ArmOut output (outputs 1-3). This condition is ignored, when the area is switched over to the ARM mode for other reasons.

When the area is in the ARM mode, and the arm command is issued (e.g., the SMS command “ARM”), the command is ignored. To re-activate the ARM mode, first switch to the DISARM mode, and then to the ARM mode. The SMS command example: “/pass AREA1 DISARM ARM”.

6 Getting started

The CCU825 GSM controller must be configured prior to use. Configuration is done using the CCU Shell web configurator. With CCU Shell, you can configure the controller, update its firmware, change the voice messages over the Internet or over the USB with a web browser.

6.1 Supported web browsers

- Google Chrome
- Mozilla Firefox
- Microsoft Edge
- Safari

6.2 CCU Proxy supported operating systems

- Windows 7
- Windows 10
- Linux
- macOS
- etc.

6.3 Default username and password

The factory configuration has a default credentials; username: **admin**, password: **password**.

6.4 Working with the controller over the USB

CCU Proxy program connects your PC to the controller. To work with the controller over the USB you need:

1. Download the ccuproxy.zip file at <http://www.radsel.ru/files/ccuproxy.zip> and extract its contents into a separate folder.

Never run CCU Proxy program without extracting ccuproxy.zip first!

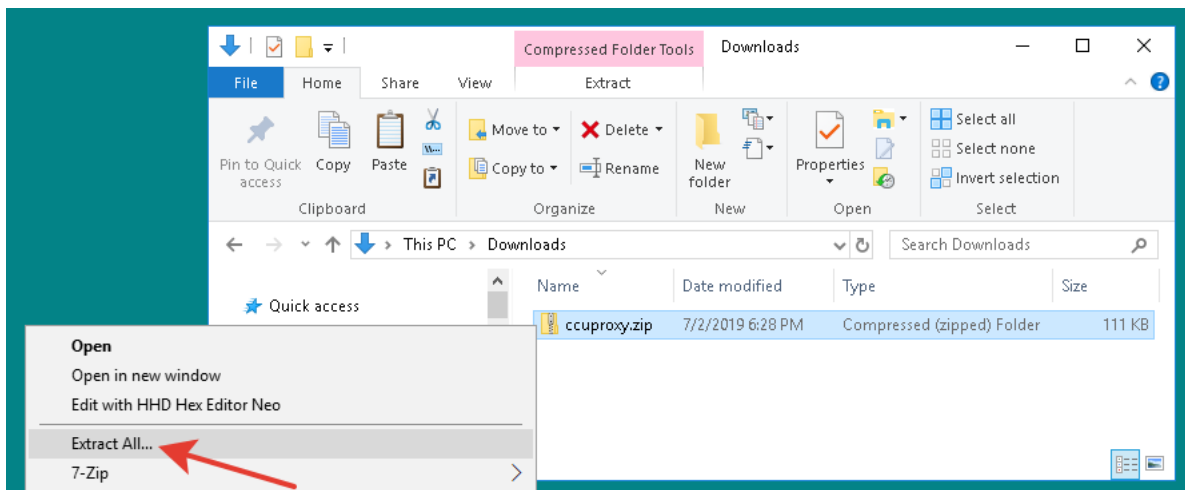


Figure 8: Opening the context menu with the right-click on the ccuproxy.zip file

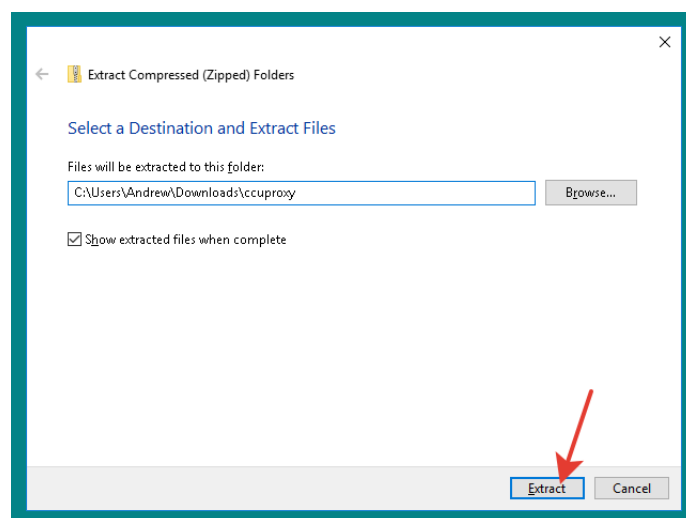


Figure 9: Extracting the ccuproxy.zip file contents into the separate ccuproxy folder

2. Connect the controller to the USB port of the computer. If the Internet access is available, the required driver will be installed automatically. If the driver is not automatically installed, you need to install it manually specifying the CCU_USB_driver.inf file in the folder with the extracted ccuproxy.zip. After the driver is successfully installed, the USB LED will turn orange.
3. Start the CCU Proxy program with the ccu_shell.bat file. If there is the request to allow to make changes to your device upon starting program, you must accept it. CCU Proxy has no graphical user interface and looks like black window with text. Never close this window while you are working with the controller over the USB. Run ccuproxy.exe -h at the Windows Command Prompt to see all CCU Proxy startup options.

Run the bat files from the standard Windows File Explorer only!

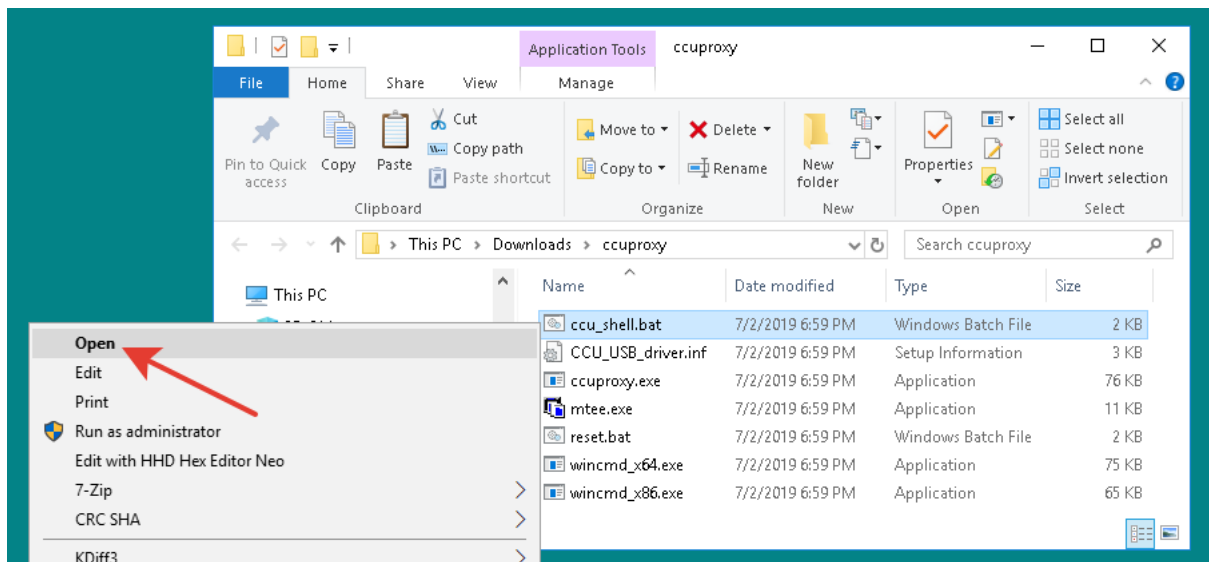


Figure 10: Starting CCU Proxy with ccu_shell.bat

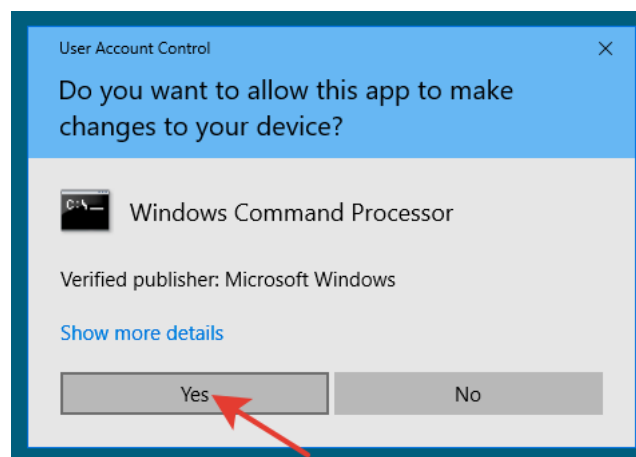


Figure 11: Accepting the make changes request.

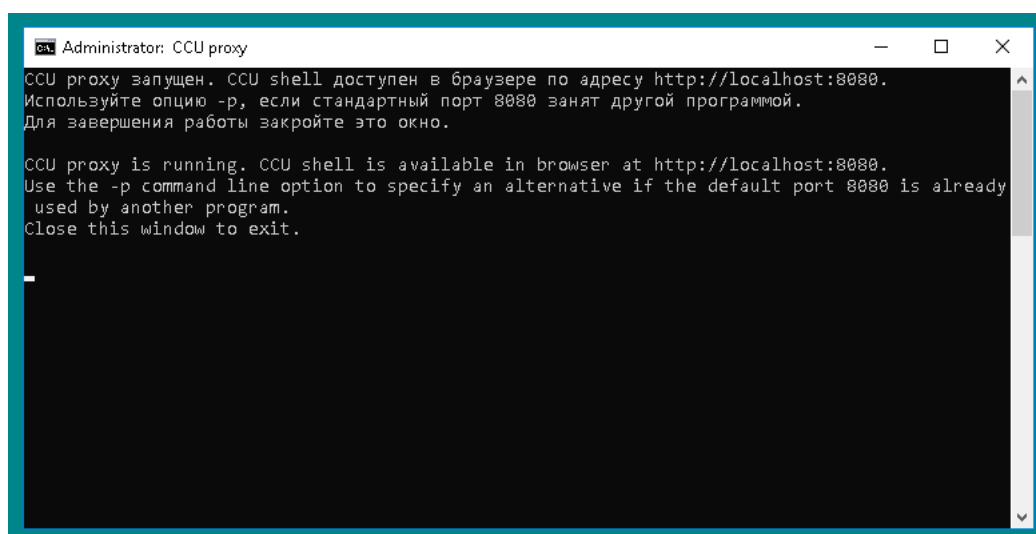


Figure 12: CCU Proxy program window

4. After starting the CCU Proxy with `ccu_shell.bat`, a browser window will open prompting to enter the username and the password. After specifying the username and the password you log in to the CCU Shell to configure the controller.

When starting CCU Proxy with `ccu_shell.bat`, the default Windows browser is used. If the default browser is not from the list of compatible, specify a compatible browser as the default Windows browser, and restart CCU Proxy.

To avoid unauthorized access it is not recommended saving the username and the password in a browser on a shared computer.

5. After completing the work in the CCU Shell, you must click “Log out” at the top right corner and close the browser.
6. Close the CCU Proxy program.

6.5 Working with the controller over the LAN

The CCU Proxy program allows you to work with the controller over the LAN. To do this, connect the controller to the USB port of the PC and start CCU Proxy with the “`ccuproxy.exe -a`” command at the Windows Command Prompt. In this case, the controller is accessible on the LAN by the name or IP address of this PC, for example: `http://192.168.0.10:8080`. To access the controller on the LAN you may need to setup the Windows Firewall, or the antivirus software on the PC with the CCU Proxy.

6.6 Working with the controller over the Internet

6.6.1 Automatic controller setup to work over the Internet

Auto-linking allows you to start working with the controller over the Internet without using the USB connection at all and done only with the **factory configuration**. To auto-linking:

1. Insert the SIM card in the controller and connect the power. The PIN code protection on the controller’s SIM card must be disabled. Internet and caller ID must be enabled on the controller’s SIM card plan.
2. Call the controller’s SIM card number from your own phone. The caller’s phone number will be saved into the first connection. After that, the controller will be connected to the Internet for 30 minutes. If required, you can reconnect the controller to the Internet by calling from the previously linked phone number.
3. Take note of the IMEI code printed on the label at the bottom of the controller, which will be required later to log in to the CCU Shell over the Internet.

6.6.2 Manual controller setup to work over the Internet

To manual setup the controller:

1. Log in to the CCU Shell over the USB connection.
2. Open the “Common connections parameters” page.
3. Set max session duration in the “Internet” group. Click “Submit”. If the value is “always online”, the controller will immediately start connecting to the Internet.
4. Open the “Connections” page and select desired connection.
5. Set the username and password. Check the “Admin rights” checkbox!
6. Set your own phone number.
7. In the “Incoming call reaction” group in the drop-down list select the required item. For example, if control with voice assistant is not required, select “Reject call (DTMF not available)”. Check the “Connect to the Internet using `https://ccu.sh`” checkbox.
8. Click “Submit”.
9. Take note of the username and the IMEI code displayed at the top right corner of the CCU Shell as `admin@012345678901234`, which will be required later to log in to the CCU Shell over the Internet.

6.6.3 Log in to the CCU Shell over the Internet

To log in to the CCU Shell over the Internet:

1. If the controller is not configured to be always online, bring the controller online in one of the ways: by a phone call to the controller from the previously saved phone number, or by sending to the controller the “/pass online !” SMS message.
2. Start the browser and open <https://ccu.sh>. Then you will be prompted to enter your username and password.
3. In the “Username” field, enter the username and the IMEI in the format: user@IMEI, where user is the username specified in the connection settings, and IMEI is the 15-digit IMEI code of your controller. For example: admin@012345678901234. In the “Password” field, enter previously set password.

To avoid unauthorized access it is not recommended saving the username and the password in a browser on a shared computer.

4. After completing the work in the CCU Shell, you must click “Log out” at the top right corner and close the browser.

6.7 Working with the controller over the Viber and Telegram

6.7.1 Controller setup to work over the Viber

1. Install the Viber application on your smartphone.
2. Check the “Enable bot link” checkbox on the “Service menu” configurator page.
3. Setup the controller to work over the Internet and bring it online as described above.
4. Run QR Scanner in Viber, refer to the link:
<https://support.viber.com/customer/portal/articles/2835920-use-viber-s-qr-scanner> .
5. Scan the QR code:



6. Start chatting with the bot and link the phone number according prompts.

6.7.2 Controller setup to work over the Telegram

1. Install the Telegram application on your smartphone.
2. Check the “Enable bot link” checkbox on the “Service menu” configurator page.
3. Setup the controller to work over the Internet and bring it online as described above.
4. Find the ccurobot bot using the Telegram search tool.
5. Start chatting with the bot and link the phone number according prompts.

6.8 Reset to the factory settings

Reset to the factory settings is possible in one of the following ways:

- Open the “Configuration” configurator page and click “Full reset” button.
- In case of losing the username or password, you need to reset the controller to the factory settings. Connect the controller to the USB port of the computer and run reset.bat in the ccuproxy folder. After 30 minutes, all the controller settings will be reset, and the default username and password will be set.

7 Controller configurator CCU Shell

7.1 Basic configurator elements

Figure 13: Basic configurator elements, part 1

Data transmission indicator

At the top left corner there is the indicator displaying controller data transmission.

Username and IMEI

Displays the username of the current user and the controller IMEI in the format: user@IMEI. The string in this form is used as the composite username to log in to the CCU Shell over the Internet.

Log out

Clicking the link causes the user to log out of the configurator.

After completing the work in the configurator, for security reasons, it is recommended to click the “Log out” link before closing the browser!

Update period

On some pages there is the setting “Update period”, which allows you to set the period of updating information on the page.

Figure 14: Basic configurator elements, part 2

Submit

When you click the button, the parameters on the current page are saved.

Navigating to another page without clicking the “Submit” button will result in the loss of the changes being made to the current page.

Changing the parameters of the inputs may trigger the alarm events. Changing the parameters of the outputs may cause turning on the actuators. Make sure that changing the parameters will not cause malfunction of the equipment connected to the controller and an accident. Disconnect the equipment from the controller if there is the slightest possibility of an accident!

7.2 Initial setup

The initial setup page is displayed when you first log in to the controller or when you log in after the full configuration reset. On this page you must set the password of the first user other than the default. It is impossible to use the configurator if the password is not set. The initial setup page will not be displayed after setting the password.

Figure 15: “Initial setup” page

Language

Allows you to change the language of the configurator interface.

Username

The username must be between 1 and 16 characters, may contain letters, digits, and symbols from the set: “- _ ”. The username is case-sensitive. It is intended to log in to the CCU Shell and control the controller over the embedded HTTP JSON API.

Password

The password must be between 8 and 16 characters, may contain letters, digits, spaces, and symbols from the set: “! “#\$%&’()*+,-./:;<=>?@[\\]^_‘{|}~”. The password is case-sensitive. It is intended to log in to the CCU Shell and control the controller over the embedded HTTP JSON API.

7.3 Common

CCU shell

HOUSE admin@863833020335055 Log out

Common
[Control](#)
[Connections common parameters](#)
[Connections](#)
[Scheduler](#)
[System parameters](#)
[Security](#)
[Inputs common parameters](#)
[Inputs](#)
[Outputs](#)
[Scenarios](#)
[Profiles](#)
[Service menu](#)
[Configuration](#)
[Firmware](#)
[Voice messages](#)
[PLC](#)

Common

Language
☐ Русский
☒ English

[Write to tech support](#)
Controller ID to contact tech support:
CCU825-PLC-h12.02-f02.20-b00.00-Jul 5 2019-RUS-ID:13000018AE492444543CA91FF50020C2-
IMEI:863833020335055-GSM:GC10RCR02A07-ExtBoard:E01.1

Parameter	Value
Controller type	CCU825
Controller modification	PLC
Hardware version	12.02
Firmware version	02.20
Bootloader version	00.00
Firmware build date	Jul 5 2019
Language code	RUS
Serial number	13000018-AE492444-543CA91F-F50020C2
IMEI	863833020335055
GSM	GC10RCR02A07
Extension board	E01.1

Figure 16: “Common” page

Language

Allows you to change the language of the configurator interface.

Write to tech support

Clicking the link launches the default e-mail program and creates the message to tech support with controller ID in the subject.

Controller ID to contact tech support

The highlighted controller ID should be placed in the message body or subject when contacting tech support.

Controller information table

The table displays the controller ID in a convenient form. The GSM module version is available only when the main power or battery is connected.

7.4 Control

7.4.1 Single area controller mode

CCU shell HOUSE admin@863833020335055 [Log out](#)

[Common](#) **Control** Update period: 5 s ↕

[Control](#)

[Connections common parameters](#)

[Connections](#)

[Scheduler](#)

[System parameters](#)

[Security](#)

[Inputs common parameters](#)

[Inputs](#)

[Outputs](#)

[Scenarios](#)

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GSM

60%

Signal strength is good, -87 dBm

Registered on the home network

Balance is not defined

Arming mode

DISARM

Inputs

In1	In2	In3	In4	In5	In6	In7	In8
Pulse	Pulse	Pulse	Pulse	Pulse	Pulse	Pulse	Pulse

Outputs

R1	R2	Out1	Out2	Out3	Out4	Out5
On	On	On	On	On	On	On
Off	Off	Off	Off	Off	Off	Off

Scenario control

↕
 ↕

Profile control

↕

Figure 17: “Control” page in the single area controller mode

GSM

Displays the signal strength, GSM network status and balance. Information will be available only when the main power or battery is connected.

Arming mode

Displays the current controller arming mode and allows you to change it.

Inputs

Displays the current status of the inputs and allows you to simulate the short-term inputs activation to check the correctness of the controller logic setting.

Outputs

Displays the current status of the relays and outputs and allows you to control them.

Scenario control

The “Run” button allows you to run the required scenario on the selected output. If the scenario is running

on the selected output, it will be stopped and the required one will start. The “Stop” button stops any runned scenario on the selected output, and the output is turned off.

Profile control

The “Apply” button allows you to activate the selected profile.

Reset arming mode and outputs

Resets the arming mode of the controller or areas to the DISARM state and turns off all relays and outputs.

Restart controller

Restarts the controller. This function is required in rare cases. There is no need to restart the controller when changing the configuration parameters or control.

7.4.2 Multiple area controller mode

The screenshot displays the 'Control' page of the CCU shell. At the top, the status bar shows 'CCU shell' with a battery icon, 'HOUSE' in green, the user 'admin@863833020335055', and a 'Log out' link. Below the status bar, a sidebar on the left contains a list of navigation links: Common, Control (selected), Connections common parameters, Connections, Scheduler, System parameters, Security, Inputs common parameters, Inputs, Outputs, Scenarios, Profiles, Service menu, Configuration, Firmware, and Voice messages. The main content area is titled 'Control' and features an 'Update period: 5 s' dropdown menu. The GSM status is shown with a green progress bar at 95% and text indicating 'Signal strength is excellent, -73 dBm', 'Registered on the home network', and 'Balance is not defined'. Below this, four area control panels are displayed in a 2x2 grid. Each panel is titled 'Area N' (where N is 1, 2, 3, or 4) and shows the current arming mode as 'DISARM'. Each panel contains two buttons: 'ARM' and 'DISARM'.

Figure 18: “Control” page in the multiple area controller mode

Area N

Displays the current area arming mode and allows you to change it.

7.5 Connections common parameters

7.5.1 Internet

CCU shell ■ HOUSE admin@863833020335055 [Log out](#)

[Common](#)
[Control](#)
[Connections common parameters](#)
[Connections](#)
[Scheduler](#)
[System parameters](#)
[Security](#)
[Inputs common parameters](#)
[Inputs](#)
[Outputs](#)
[Scenarios](#)
[Profiles](#)
[Service menu](#)
[Configuration](#)
[Firmware](#)
[Voice messages](#)
[PLC](#)

Connections common parameters

Controller name:

▼ Internet

Max session duration when using <https://ccu.sh>:

Cellular data

APN:

Username:

Password:

DNS 1:

DNS 2:

▶ Secure usage

▶ Outgoing calls

▶ Balance control

Figure 19: “Connections common parameters” page, “Internet” group

Controller name

The controller name must be between 1 and 32 characters. May be empty. The controller name is displayed in the Viber and Telegram bots.

Max session duration when using <https://ccu.sh>

Sets the time the controller is on the Internet. If the “always online” value is set, the controller will always be accessible over the Internet. If any other numeric value is set, the controller connects to the Internet at the user’s request for the specified time. If the controller connects to the Internet by an event, then this setting has no effect on the time the controller spent on the Internet. In this case, the controller will be on the Internet until all the events are sent to the user.

Cellular data

If the cellular operator provides access to the Internet without settings, there is no need to set the parameters of the data transmission on the cellular network. Otherwise, set the parameters received from the operator.

APN

Access point name. The APN must be between 3 and 32 characters, may contain letters, digits, and symbols from the set: “.-”. The APN is case-insensitive.

Username

The username must be between 1 and 16 characters, may contain letters, digits, and symbols from the set: “- _”. May be empty. The username is case-sensitive.

Password

The password must be between 1 and 16 characters, may contain letters, digits, and symbols from the set: “- _”. May be empty. The password is case-sensitive.

DNS N

IPv4 DNS server address in the form of four separated by dots decimal numbers from 0 to 255 each. If the cellular operator has not provided the DNS addresses, leave these fields by default: “0.0.0.0”.

7.5.2 Secure usage

The screenshot shows the 'Connections common parameters' page in the CCU shell. The sidebar on the left contains links: Common, Control, Connections common parameters (selected), Connections, Scheduler, System parameters, Security, Inputs common parameters, Inputs, Outputs, Scenarios, Profiles, Service menu, Configuration, Firmware, Voice messages, and PLC. The main content area is titled 'Connections common parameters' and shows the 'Controller name' as 'HOUSE'. Below this, there are expandable sections: 'Internet', 'Secure usage' (selected and highlighted with a blue border), 'Outgoing calls', and 'Balance control'. The 'Secure usage' section contains the following fields and options:

- PIN code: [text input field]
- SMS center phone number: [+... [text input field]
- SMS configuration password: [text input field]
- SMS control password: [text input field with value 'pass']
- DTMF control password: [text input field]
- ☒ DTMF control only from the phones in the connections list
- ☒ SMS control only from the phones in the connections list
- ☒ Always confirm the SMS commands completion
- Do not process the SMS commands older than: [-- [dropdown menu]

At the bottom of the main content area is a 'Submit...' button.

Figure 20: “Connections common parameters” page, “Secure usage” group

PIN code

The PIN code must be between 1 and 8 digits. May be empty. The controller automatically detects the need to enter the PIN code using the SIM card settings. If the PIN code protection is enabled on the SIM card, the controller will enter the PIN code specified in the configurator when the controller is started and rebooted. The number of attempts to enter the PIN code is limited on the SIM card! If the PIN code is not specified in the configurator, the controller will not attempt to enter it. If the PIN code protection is disabled on the SIM card, the controller will not attempt to enter the PIN code, regardless of whether it is specified or not in the configurator.

SMS center phone number

The SMS center phone number must be between 7 and 15 digits with “+” or between 3 and 15 digits without “+”. May be empty. The operator’s SMS center phone number is used to send SMS. When the field is empty, the SMS center number recorded by the operator on the SIM card will be used. If the number is not specified in the configurator and is not recorded on the SIM card, the controller can not send SMS.

Do not enter your own phone number in this field!

SMS configuration password

The SMS configuration password must be between 1 and 8 characters, may contain letters and digits. May be empty. The SMS configuration password is case-sensitive. It is intended to use the extended SMS commands

to change the configuration.

Changing the configuration with the SMS is the obsolete function.

SMS control password

The SMS control password must be between 1 and 8 characters, may contain letters and digits. May be empty. The SMS control password is case-sensitive. It is intended to use the SMS commands to control and queries.

DTMF control password

The DTMF control password must be between 1 and 4 digits. May be empty. It is intended to access the voice assistant.

DTMF control only from the phones in the connections list

If the parameter is checked, the incoming calls from the numbers not specified in the connections list will be rejected. If unchecked, the controller accepts all incoming calls with the mandatory DTMF password entering. Regardless of the parameter value, the logic of processing incoming calls from the connections list is determined by the settings of the corresponding connection.

SMS control only from the phones in the connections list

If the parameter is checked, the control SMS from the numbers not specified in the connections list will be rejected. This mode provides the most secure usage of the controller. Uncheck this parameter and set the SMS control password if required to control the controller from a large number of the phone numbers.

Always confirm the SMS commands completion

If the parameter is checked, the controller responds with the SMS containing the report on the status of the parameters affected by the command. The parameter works only when commands are sent from the numbers in the connections list. If unchecked, the confirmation can optionally be requested using the symbol “!” at the end of the command. Users from the numbers not specified in the connections list can also use the commands with the symbol “!” at the end, as needed.

Do not process the SMS commands older than

In some cases, the operator delivers the SMS messages to the controller with a long delay. Such SMS commands can lead to the undesirable results. To prevent them from being, you can set the time during which the SMS command is considered reliable. If this time is exceeded, the command will be rejected and the user will receive the SMS notification “OUTDATED MESSAGE”. The commands of setting and synchronizing the controller clock with the time of the SMS center are processed always.

If the controller clock is stopped for any reason, the reply message will contain the string “--:--” instead of the time. In this case, you need to set the clock, otherwise the SMS commands, except of setting and synchronizing the controller clock, will not be processed.

7.5.3 Outgoing calls

The screenshot shows the 'CCU shell' interface. On the left is a sidebar with navigation links: Common, Control, **Connections common parameters**, Connections, Scheduler, System parameters, Security, Inputs common parameters, Inputs, Outputs, Scenarios, Profiles, Service menu, Configuration, Firmware, Voice messages, and PLC. The main content area is titled 'Connections common parameters'. It contains a 'Controller name' field with the value 'HOUSE'. Below this are several expandable sections: 'Internet', 'Secure usage', 'Outgoing calls' (which is highlighted with a blue box), and 'Balance control'. The 'Outgoing calls' section is open, showing 'Connections order' set to 'Round robin from 1 to 8' and 'Delay between the end of one call and the beginning of the next' set to '10 s'. A 'Submit...' button is at the bottom of the main content area.

Figure 21: “Connections common parameters” page, “Outgoing calls” group

Connections order

1. **Round robin from 1 to 8**

When the event is generated, the notifications are made sequentially from the connection with the lower number to the greater one. In this case, one attempt to deliver the message of the current connection is enough to proceed to the next connection, and the completion of the message queue of the current connection is not required.

2. **Connections with the lower number has priority until full transmission**

When the event is generated, the notifications are made sequentially from the connection with the lower number to the greater one. In this case, the completion of the message queue of the current and previous connections is required to proceed to the next connection. For example, if, when processing the message queue of the connection 3, the message is generated on the connection 1, the next message will be delivered on the connection 1, regardless of the completion of the message queue of the connection 3.

3. **Current connection has priority until full transmission**

When the event is generated, the notifications are made sequentially from the connection with the lower number to the greater one. In this case, the completion of the message queue of the current connection is required to proceed to the next connection.

4. **Current connection has priority until first failure**

When the event is generated, the notifications are made sequentially from the connection with the lower number to the greater one. In this case, to proceed to the next connection it is required either the completion of the message queue of the current connection or the fulfillment of one of the following conditions: the number is busy, the subscriber is unavailable, or has not accepted the call within the allotted time.

The message is removed from the connection queue upon successful delivery or when the “Cancel transmission if it’s not completed within” time is expired.

The first connection order is preferred in most cases. It must meet the requirements of the messages delivery to the maximum users number within the shortest possible time.

Delay between the end of one call and the beginning of the next

The delay between outgoing calls allows the controller to accept incoming calls and send SMS even if there are messages in the queue for the voice notifications. A very long delay slows down the process of the users notification.

7.5.4 Balance control

The function controls the controller SIM card account balance automatically and notify users when it reduces.

CCU shell HOUSE admin@863833020335055 [Log out](#)

[Common](#)
[Control](#)
Connections common parameters
[Connections](#)
[Scheduler](#)
[System parameters](#)
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[Inputs common parameters](#)
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[Voice messages](#)
[PLC](#)

Connections common parameters

Controller name:

☐ Internet
☐ Secure usage
☐ Outgoing calls
☒ **Balance control**

USSD command:

Keyword:

Notify when balance drops to [0-65535]:

Balance request period, hours [0-255]:

☐ Defer notifications on nightly (11:00 p.m. - 08:00 a.m.) balance drops until morning

Figure 22: “Connections common parameters” page, “Balance control” group

Predefined templates

The predefined templates buttons allows to fill in the “USSD command” and “Keyword” fields with settings specific to the selected cellular operator.

USSD command

USSD command starts with “*” or “#” symbol. The USSD command must be between 1 and 8 characters, may contain digits and symbols from the set: “*#”. May be empty. Ask your cellular operator for the balance request USSD command.

Keyword

The keyword must be between 1 and 8 characters, may contain letters, Cyrillic letters, digits, spaces, and symbols from the set: “!\"#\$%&'()*+,-./:;<=>?@[\]^_`{|}~”. May be empty. The keyword is case-sensitive. The keyword is used to parse the USSD response of the operator. All digits after the keyword in the USSD response are considered as the balance value. SMS responses of the operator are not parsed!

Notify when balance drops to [0-65535]

The value must be from 0 to 65535. If the balance drops to the specified value, the users will be notified. The repeated notification will occur only after the account balance replenishment more than the specified value and the subsequent drop.

Balance request period, hours [0-255]

The value must be from 0 to 255. The balance request period is the time in hours that the controller uses to

periodically request an account balance. When this parameter is zero, the balance request by the controller is disabled, the balance information is not available for the controller and is not provided to the users.

Defer notifications on nightly (11:00 p.m. - 08:00 a.m.) balance drops until morning

If the balance drop occurred at the night, the notifications can be deferred until the morning.

In most cases, the algorithm of balance query and parsing allows to correctly recognize a numerical value. However, if an operator uses nonstandard character encoding or other local features of balance transfer, the balance control function may not work correctly. In this case, the balance will be unavailable.

7.6 Connections

CCU shell ■ HOUSE admin@863833020335055 [Log out](#)

[Common](#)
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[Firmware](#)
[Voice messages](#)
[PLC](#)

Connections

Connection 1 ⌵ Copy settings from another connection

☒ Enabled
☐ Disable bots events "online"/"offline" (for advanced users)

Full user name:

Web credentials

Username:

Password:

☒ Admin rights

Phone number:

Group 1 ⌵

Notifications order:
All: BOTS and JSON and VOICE and SMS ⌵

Reaction to the incoming call

Reject (DTMF control not possible) ⌵

☒ Connect to the Internet using <https://ccu.sh>

Relay 1 ⌵ -- ⌵

▸ Notification over Viber and Telegram bots

▸ Notification over embedded HTTP JSON API

▸ Notification over voice call

▸ Notification over SMS

Submit...

Figure 23: “Connections” page

The controller supports up to 8 connections. The connection is a group of settings of the controller user. All the users have the same control and monitoring capabilities.

Connection N

Allows to select the desired connection to view and change its settings.

Selecting the desired connection without clicking the “Submit” button will result in the loss of the changes being made to the current connection.

Copy settings from another connection

Allows to easily copy settings from another connection to the selected one. When copying settings from another connection, the following fields remain unchanged: “Full user name”, “Username”, “Password” and “Phone number”. When copying settings to the first connection, the following fields additionally remain unchanged: “Enabled” and “Admin rights”.

Enabled

Allows to completely disable the selected connection without resetting its settings. In the first connection this checkbox is always checked.

Disable bots events "online"/"offline" (for advanced users)

Allows to completely disable notifying the user over the Viber and Telegram bots about the events of connecting and disconnecting the controller to the Internet. It may be useful in rare cases of unstable connection on the controller side.

Full user name

The full user name must be between 1 and 32 characters. May be empty. Used in the Viber and Telegram bots to notify about user actions.

Username

The username must be between 1 and 16 characters, may contain letters, digits, and symbols from the set: “.-_”. In all the connections except the first the field may be empty provided that the “Password” field is also empty. The username is case-sensitive. It is intended to log in to the CCU Shell and control the controller over the embedded HTTP JSON API.

Password

The password must be between 8 and 16 characters, may contain letters, digits, spaces, and symbols from the set: “!\"#\$%&'()*+,-./:;<=>?@[\\]^_`{|}~”. In all the connections except the first the field may be empty provided that the “Username” field is also empty. Password is case-sensitive. It is intended to log in to the CCU Shell and control the controller over the embedded HTTP JSON API.

Admin rights

Allows the user to access the configurator. In the first connection this checkbox is always checked.

Phone number

The phone number must be between 7 and 15 digits with “+” or between 3 and 15 digits without “+”. May be empty. Used to notify the user and control the controller.

Group N

The group of the connections is considered as a whole when it is being notified. To successfully notify the group it is enough that one of the group users receives the message. This rule works only for the events selected in the different connections of the group and having the same type and transport! This rule applies only to the notifications over the voice call and SMS! The group of the connections may be useful in the following cases:

- One user can combine two of their phones into the group. To receive notification, it is enough that the user listen to the message in one of the phones. In this case, the parameter “Connections order” can be set to the “Round robin from 1 to 8” value.
- Two users: the guard and the responsible, can be combined into the group. Notifications will first be delivered to the guard and only in case of failure to the responsible. In this case, the parameter “Connections order” must be set to the “Connections with the lower number has priority until full transmission” value, and the guard must be specified in the connection with a lower number than the responsible.

Notifications order

1. **All: BOTS and JSON and VOICE and SMS**
The notification will occur by all transport types, regardless of the success of the previous one. The notifications order by transport type is not defined.
2. **Until first success: BOTS or JSON or VOICE or SMS**
The notification will occur in the specified order by transport type until the first success.
3. **Until first success: BOTS or SMS or JSON or VOICE**
The notification will occur in the specified order by transport type until the first success.

If the connections are combined into the group, the successful delivery to the one user of the group cancels the delivery to the other users of the group:

- *by the successful transport type for all notifications orders;*
- *by the following transport types for notifications orders 2 and 3.*

When the user cancels the delivery of the listened voice messages using the “#” key, the delivery of the messages to the users with notifications order 2 is canceled starting from the voice transport.

Reaction to the incoming call

To identify users by phone number, the caller ID feature must be enabled on the controller’s SIM card plan.

Controller reaction

1. **Accept and go to voice menu with password (DTMF control)**
When calling from the phone number of this connection, the controller accepts the call and prompts the user to enter the password, after entering the correct password, the user goes to the voice menu.
2. **Accept and go to voice menu without password (DTMF control)**
When calling from the phone number of this connection, the controller accepts the call, the user goes to the voice menu without entering a password.
3. **Reject (DTMF control not possible)**
The call from the phone number of this connection will be rejected, access to the voice menu is impossible.
4. **Reject and change arming mode (ARM/DISARM)**
The call from the phone number of this connection will be rejected, and at the same time the arming mode will be changed to the opposite: from ARM to DISARM or vice versa. If the current arming mode is PROTECT, then the controller will switch over to the DISARM mode. Switching to the PROTECT mode in this way is impossible.

Connect to the Internet using <https://ccu.sh>

When calling from the phone number of this connection, the controller will go online for the time specified in the “Max session duration when using <https://ccu.sh>” setting on the “Connections common parameters” page. During this time, the controller will be accessible at the <https://ccu.sh>. In the case of the controller reaction “...go to voice menu...”, in order to allow the controller to connect to the Internet, the user must hang up.

Relay/output reaction

This setting allows to specify the reaction of the one relay/output to the incoming call. The relay/output can be on, off or controlled by the scenario.

7.6.1 Notification over Viber and Telegram bots

Notification over Viber and Telegram bots

☒ Enabled

Send messages from following sources

In1 In2 In3 In4 In5 In6 In7 In8

ALL ACT PASS -- -- -- -- --

Arming mode

☒ ARM

☐ PROTECT

☒ DISARM

☒ System events

☒ Test and info messages

☒ Profile applying

Generate test message

Figure 24: “Connection” page, “Notification over Viber and Telegram bots” group

To deliver the message in this way, the controller connects to the Internet.

Enabled

Allows to completely disable this type of notification without resetting its settings.

Send messages from following sources

This group of settings allows to select the events about which the user should be notified.

In1-InN

Allows to deliver the event about the input status change. Can take values:

- -- — notification disabled;
- ACT — only switching over to the active state;
- PASS — only switching over to the passive state;
- ALL — switching over to the active and passive state.

Arming mode

When arming mode is changed, the events will be delivered only for the selected modes.

System events

Allows to deliver all the system events.

Test and info messages

Allows to deliver the test and information events.

Profile applying

Allows to deliver the profile applying events.

Generate test message

It is intended to check the correctness of the controller settings required for notifying the user. Successful delivery of the test message is possible only when all the required parameters and permissions are set correctly.

7.6.2 Notification over embedded HTTP JSON API

Notification over embedded HTTP JSON API

☒ Enabled

μGuard wake up call (obsolete function)

Wake up call duration: 5 s

Call after connecting to the Internet

Cancel data transmission if it's not completed within: 16 min

Send messages from following sources

In1
In2
In3
In4
In5
In6
In7
In8

ACT
PASS
ALL
--
--
--
--
--

Arming mode

☒ ARM
☐ PROTECT
☒ DISARM

☒ System events
☒ Test and info messages
☒ Profile applying

Generate test message

Figure 25: “Connection” page, “Notification over embedded HTTP JSON API” group

To deliver the message in this way, the controller connects to the Internet.

Enabled

Allows to completely disable this type of notification without resetting its settings.

μGuard wake up call (obsolete function)

When sending the message, the controller makes the short voice call (without pick up) to the phone number of this connection to wake up the smartphone. The μGuard application captures the call from the controller’s SIM card number and requests information from the controller over the network.

The function of waking up the smartphone by the outgoing voice call is obsolete. Use Viber and Telegram bots to control and monitor the controller on the smartphone.

Wake up call duration

May be useful when the default duration of the wake up call is not sufficient to wake the smartphone.

Wake up call mode

1. **Call after connecting to the Internet**
Messages to the μGuard are delivered over the Internet using the relay server <https://ccu.sh>.
2. **Call immediately (for advanced users)**
Messages to the μGuard are delivered over the LAN using the CCU Proxy program.

35

Cancel data transmission if it's not completed within

In case of messages delivery failure, the controller will try to deliver them within the time specified in this setting. The transmission timer is reset when the next event is queued. The transmission timer does not work if the controller is not registered on the GSM network.

Send messages from following sources

This group of settings allows to select the events about which the user should be notified.

In1-InN

Allows to deliver the event about the input status change. Can take values:

- **--** — notification disabled;
- **ACT** — only switching over to the active state;
- **PASS** — only switching over to the passive state;
- **ALL** — switching over to the active and passive state.

Arming mode

When arming mode is changed, the events will be delivered only for the selected modes.

System events

Allows to deliver all the system events.

Test and info messages

Allows to deliver the test and information events.

Profile applying

Allows to deliver the profile applying events.

Generate test message

It is intended to check the correctness of the controller settings required for notifying the user. Successful delivery of the test message is possible only when all the required parameters and permissions are set correctly.

7.6.3 Notification over voice call

▼ Notification over voice call

☒ **Enabled**

Outgoing voice connection duration:
 Unlimited, going to voice menu (DTMF control) ▾

☐ Reject call without connection as success delivery

Cancel data transmission if it's not completed within: 16 min ▾

Send messages from following sources

In1	In2	In3	In4	In5	In6	In7	In8
ALL ▾	ACT ▾	PASS ▾	-- ▾	-- ▾	-- ▾	-- ▾	-- ▾

Arming mode

☒ ARM
☐ PROTECT
☒ DISARM

☒ System events
☒ Test messages

Figure 26: “Connection” page, “Notification over voice call” group

To deliver the message in this way, the controller calls the user and informs him by voice about the occurred events. For successful delivery, the user just needs to start listening to the message. Listening to the entire message is not required.

Enabled

Allows to completely disable this type of notification without resetting its settings.

Outgoing voice connection duration

1. **By message length**
The duration of the connection is determined by the voice message length.
2. **Unlimited, going to voice menu (DTMF control)**
After sending the voice message, the controller goes to the main voice menu of the voice assistant without requesting the password.
3. **Not more than N s**
Sets the maximum time in seconds from the beginning of the connection to its disconnection by the controller. If the voice message was sent before the specified time has elapsed, the controller will disconnect the connection. The short time will not allow to listen to the entire voice message. The long time will allow to listen to the entire message, and the user can disconnect the connection at any time.

Reject call without connection as success delivery

If checked, the rejection of the call by the user without picking up the phone is considered as the successful delivery. Otherwise, for the successful delivery, the user must pick up the phone and start listening.

Cancel data transmission if it's not completed within

In case of messages delivery failure, the controller will try to deliver them within the time specified in this setting. The transmission timer is reset when the next event is queued. The transmission timer does not work if the controller is not registered on the GSM network.

Send messages from following sources

This group of settings allows to select the events about which the user should be notified.

In1-InN

Allows to deliver the event about the input status change. Can take values:

- **--** — notification disabled;
- **ACT** — only switching over to the active state;
- **PASS** — only switching over to the passive state;
- **ALL** — switching over to the active and passive state.

Arming mode

When arming mode is changed, the events will be delivered only for the selected modes.

System events

Allows to deliver all the system events.

Test messages

Allows to deliver the test events.

7.6.4 Notification over SMS

Notification over SMS

☒ Enabled

SMS language: English

When changing arming mode, send: Touch Memory key name

☒ SMS commands error checking

Cancel data transmission if it's not completed within: 16 min

Send messages from following sources

In1	In2	In3	In4	In5	In6	In7	In8
ALL	ACT	PASS	--	--	--	--	--

Arming mode

☒ ARM
☐ PROTECT
☒ DISARM

☒ System events
☒ Test and info messages
☒ Profile applying

Figure 27: “Connection” page, “Notification over SMS” group

To deliver the message in this way, the controller sends the SMS to the user phone. The moment of sending the message to the SMS center of the operator is considered as the successful delivery. In some cases, the operator delivers the SMS messages to the user with a long delay.

Enabled

Allows to completely disable this type of notification without resetting its settings. When SMS notifications is disabled, SMS commands from the user's phone will be processed, SMS replies will be sent if necessary.

SMS language

Specifies the SMS language for sending events to the user.

Regardless of the specified SMS language, the controller processes the user's SMS commands in any supported language and responds, if necessary, in the command language.

1. **English**
The language of the SMS notifications is English.
2. **Russian**
The language of the SMS notifications is Russian.
3. **µGuard (obsolete function)**
SMS notifications are sent in special machine-readable format for µGuard program.

Please note that the SMS language selection affects the maximum allowed number of characters in one SMS message. English allows to send up to 160 characters in one message, Russian up to 70 characters. This means that sending the same information in Russian requires 2-3 messages instead of one in English, which affects the cost.

When changing arming mode, send

When changing the arming mode using the touch key, the key information is sent to the user.

1. **Touch Memory key code**
The key code is sent in hexadecimal form, for example "ARM T:BE000005DA909101".
2. **Touch Memory key name**
The key name, specified by the user when the key is added to the controller list, is sent.

SMS commands error checking

Enables user SMS commands error checking function. When the error checking is enabled, the controller responds to the incorrect SMS commands with the error information. The incorrect word will be marked with the characters ">...<", which allows the user to see where the error was made. There is no respond if the password is erroneous.

Erroneous command example:

/pass ARN !

Response example:

12:45

>ARN<

In this case, the error is in the last letter of the word ARN, the correct command is ARM.

SMS commands error checking works only for the users with phone numbers from the connections list.

Send messages from following sources

This group of settings allows to select the events about which the user should be notified.

In1-InN

Allows to deliver the event about the input status change. Can take values:

- -- — notification disabled;
- **ACT** — only switching over to the active state;
- **PASS** — only switching over to the passive state;
- **ALL** — switching over to the active and passive state.

Arming mode

When arming mode is changed, the events will be delivered only for the selected modes.

System events

Allows to deliver all the system events.

Test and info messages

Allows to deliver the test and information events.

Profile applying

Allows to deliver the profile applying events.

7.7 Scheduler

CCU shell
HOUSE admin@863833020335055 Log out

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Scheduler

Update period: 5 s

Time
Time zone: (GMT+03:00) Moscow, St. Petersburg, Tula, Volgograd

Controller: 24 / 07 / 2019 18 : 46 Edit
Computer: 24 / 07 / 2019 18 : 46 Synchronize

Info message content

In1	In2	In3	In4	In5	In6	In7	In8
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
R1	R2	Out1	Out2	Out3	Out4	Out5	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

No.	On	Time	Mo	Tu	We	Th	Fr	Sa	Su	Test	Info	Action	Parameter
1	<input checked="" type="checkbox"/>	12 : 00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	--	↕
2	<input checked="" type="checkbox"/>	22 : 00	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Switch to ARM	↕
3	<input checked="" type="checkbox"/>	01 : 00	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Apply profile 1	↕
4	<input checked="" type="checkbox"/>	08 : 00	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Apply profile 2	↕
5	<input checked="" type="checkbox"/>	19 : 00	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Control output 1	↕ On ↕
6	<input checked="" type="checkbox"/>	07 : 00	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Control relay 1	↕ Off ↕
7	<input type="checkbox"/>	00 : 00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	--	↕
8	<input type="checkbox"/>	00 : 00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	--	↕

Submit...

Figure 28: “Scheduler” page

Time

This group of settings allows to set the controller clock.

Time zone

Allows to set the time zone of the controller installation place. When setting the time zone, there is no need to save data using the “Submit” button on the scheduler page.

Controller

Displays and allows to change the date and time of the controller clock. To display the controller clock running, it is necessary to set the update period of the scheduler page to a small value of 3-5 seconds. When you click the “Edit” button, the manual date and time edit mode is turned on. The buttons “Cancel” and “Submit” appearing in this mode allow, respectively, to reject the changes being made or to save them to the controller. If for some reason the controller clock is stopped, then the date and time are displayed as “mm/dd/yyyy” and “-:-”. This may occur when changing the clock battery. To start the clock, you must set the date and time manually or synchronize it with the computer clock.

Computer

Displays the date and time of the computer. When you click the “Synchronize” button, the controller clock is synchronized with the computer clock in accordance with the time zone.

Info message content

Allows to select the inputs and outputs, the status of which will be sent in the info message.

Scheduler tasks

No.

Displays the sequence number of the scheduler task. Up to 8 tasks can be configured.

On

Allows to enable the scheduler task. The disabled task is not used by the scheduler.

Time

Allows to set the execution time of the scheduler task.

Days of the week

Allows to select the days of the week on which the scheduler task is executed.

Test

Enables test message. When the scheduler task is executed, the test message will be sent.

Info

Enables info message. When the scheduler task is executed, the info message will be sent, the content of which is selected in the “Info message content” group.

Action

Allows to specify the action that will be performed when the scheduler task is executed. The options are: “Switch to ...”, “Control relay/output N”, “Apply profile N”.

Parameter

Allows to specify the additional parameter for the selected action. For the action “Switch to ...” in the multiple area controller mode, the parameter allows to select the desired area. For the action “Control relay/output N”, the parameter allows to select the relay/output reaction.

7.8 System parameters

7.8.1 Main power

The screenshot shows the 'System parameters' page in the CCU shell. The sidebar on the left contains links: Common, Control, Connections common parameters, Connections, Scheduler, System parameters (highlighted), Security, Inputs common parameters, Inputs, Outputs, Scenarios, Profiles, Service menu, Configuration, Firmware, Voice messages, and PLC. The main content area is titled 'System parameters' and includes an 'Update period' dropdown set to 5 s. The 'Main power' group is expanded, showing a voltage indicator at 15.2 V. Below this are checkboxes for 'Generate message when power recovery' and 'Generate message when power loss', both checked. There are also dropdowns for 'Discard pulses shorter than' (4 s) and 'Generate repeated message not earlier than' (32 min). At the bottom of the group are two rows of dropdowns for 'When power recovery' and 'When power loss', both set to 'Relay 1'. Below the 'Main power' group are four collapsed sections: Battery, Main board temperature, Case opening sensor, and Indication. A 'Submit...' button is at the bottom of the page.

Figure 29: “System parameters” page, “Main power” group

Main power indicator

Displays the current main power voltage.

Generate message when power recovery/loss

If the parameter is checked, the corresponding message is generated in case of the main power recovery/loss.

Discard pulses shorter than

When the main power is recovered/lost for a time shorter than specified in this parameter, no change of the main power is registered. This setting affects the messages generation and the relays/outputs reaction.

Generate repeated message not earlier than

After registration of the main power recovery/loss, the repeated notification will occur not earlier than the time specified in this parameter. This setting is useful in order to avoid frequent notifications when the main power supply fails. This setting affects the messages generation only.

When power recovery/loss

Allows to set the relays/outputs reaction to the power recovery/loss event.

7.8.2 Battery

The screenshot shows the 'System parameters' page in the CCU shell. The left sidebar contains a menu with links: Common, Control, Connections common parameters, Connections, Scheduler, System parameters (highlighted), Security, Inputs common parameters, Inputs, Outputs, Scenarios, Profiles, Service menu, Configuration, Firmware, Voice messages, and PLC. The main content area is titled 'System parameters' and has an 'Update period' dropdown set to '5 s'. Under the 'Battery' group, the status is 'battery disconnected'. A horizontal slider shows the battery charge level from 0% to 40%, with a current value of 20%. Below the slider, there are two checked checkboxes: 'Generate message when battery discharge to 1 level' and 'Generate message when battery discharge to 2 level'. For each checkbox, there are two dropdown menus: 'When battery discharge to 1 level' and 'When battery discharge to 2 level', both currently set to 'Relay 1'. A 'Submit...' button is at the bottom of the form.

Figure 30: “System parameters” page, “Battery” group

Status

Displays the battery status. The options are:

- **battery connected**
- **battery disconnected**
- **battery is being tested, wait a moment...**

When starting or rebooting the controller, the battery is tested to ensure that it is working properly. If the battery is faulty, the charge stops and the battery status takes value “battery disconnected”.

Battery charge indicator

Displays the current battery charge in percent.

Battery discharge levels for notification and control

Allows to set the battery discharge levels in percent. This setting affects the messages generation and the relays/outputs reaction.

Generate message when battery discharge to N level

If the parameter is checked, the corresponding message is generated in case of the battery discharge to N level.

When battery discharge to N level

Allows to set the relays/outputs reaction to the battery discharge event.

7.8.3 Main board temperature

Figure 31: “System parameters” page, “Main board temperature” group

Main board temperature indicator

Displays the current main board temperature in degrees Celsius.

The main board temperature exceeds the ambient temperature!

Main board temperature range for notification

Allows to set the main board temperature range in degrees Celsius. This setting affects the messages generation only.

Generate message when temperature goes out of range

If the parameter is checked, the corresponding message is generated in case of the main board temperature goes out of the specified range or returns to normal.

Main board temperature range for control

Allows to set the main board temperature range in degrees Celsius. This setting affects the relays/outputs reaction only.

When main board overheats/overcools

Allows to set the relays/outputs reaction to the main board overheating/overcooling event.

7.8.4 Case opening sensor

CCU shell HOUSE admin@863833020335055 [Log out](#)

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[Voice messages](#)
[PLC](#)

System parameters

Update period: 5 s ⬆ ⬇ ⬆

▶ Main power

▶ Battery

▶ Main board temperature

▼ Case opening sensor

☒ Generate message when case opens
 When case opens: Relay 1 ⬇ -- ⬇

▶ Indication

Submit...

Figure 32: “System parameters” page, “Case opening sensor” group

Generate message when case opens

If the parameter is checked, the corresponding message is generated in case of the case opens.

When case opens

Allows to set the relays/outputs reaction to the case opening event.

7.8.5 Indication

The screenshot shows the 'CCU shell' interface. The top bar includes the user 'HOUSE admin@863833020335055' and a 'Log out' link. The left sidebar contains navigation links: Common, Control, Connections common parameters, Connections, Scheduler, **System parameters**, Security, Inputs common parameters, Inputs, Outputs, Scenarios, Profiles, Service menu, Configuration, Firmware, Voice messages, and PLC. The main content area is titled 'System parameters' and has an 'Update period' dropdown set to '5 s'. Under the 'Indication' group, there are three checkboxes: 'Turn off inputs LEDs when case is closed' (unchecked), 'Show inputs 1-8 on LEDs In1-In8' (selected via a dropdown menu), and 'Show past inputs activity by flashes' (checked). There is also an unchecked checkbox for 'Show inputs activity at ArmOut output in ARM/PROTECT mode'. A 'Submit...' button is at the bottom.

Figure 33: “System parameters” page, “Indication” group

Turn off inputs LEDs when case is closed

If the parameter is checked, the LEDs In1-In8 on the main board are turned off when the case is closed. If the extended LEDs board is installed, the LEDs In1-In16, R1, R2, Out1-Out5, GSM are turned off.

Indicaion mode

1. **Show inputs 1-8 on LEDs In1-In8**

The inputs 1-8 status is shown on the main board LEDs In1-In8.

2. **Show GSM signal strength on LEDs In1-In8**

The GSM signal strength is shown on the main board LEDs In1-In8.

3. **Show inputs 9-16 on LEDs In1-In8**

E01.1
16 inp. The inputs 9-16 status is shown on the main board LEDs In1-In8.

4. **Extended LEDs board is installed**

The LEDs on the main board are turned off. Information is shown on the extended LEDs board. The inputs 1-N status is shown on the LEDs In1-InN. The relays/outputs status is shown on the LEDs R1, R2, Out1-Out5. The GSM signal strength is shown on the GSM LEDs.

Show past inputs activity by flashes

If the parameter is checked, in the ARM/PROTECT mode, the input switching over to the active state is fixed and shown by the short flashes with the period of 0.3 s on the corresponding LED. This indication will be reset when switching over from the DISARM mode to the ARM/PROTECT mode. Switching over to the DISARM mode does not reset the indication. This function actually registers the inputs activity in the last arming session.

Show inputs activity at ArmOut output in ARM/PROTECT mode

If the parameter is checked, in the ARM/PROTECT mode, the active input number is shown by the number of flashes with the period of 0.6 s every 1.5 s. When multiple inputs are active, the input with a lower number will be shown.

7.9 Security

7.9.1 Terms and definitions

ArmIn input actions:

- **Pulse**
Closing the ArmIn input to GND for a time from 100 ms. The maximum pulse duration is not limited.
- **Pulse short**
Closing the ArmIn input to GND for a time from 100 ms to 3 s.
- **Pulse long**
Closing the ArmIn input to GND for a time from 3 s. The maximum pulse duration is not limited.
- **Closing**
Closing the ArmIn input to GND forms falling edge. The closing duration is from 100 ms. The falling edge is analyzed, not the level.
- **Opening**
Opening the ArmIn input to GND forms rising edge. The opening duration is from 100 ms. The rising edge is analyzed, not the level.
- **Touch Memory (TM)**
Touch by the Touch Memory key for the time required for reading. The maximum touch duration is not limited.
- **Touch Memory (TM) short**
Touch by the Touch Memory key for the time required for reading, but not more than 3 s.
- **Touch Memory (TM) long**
Touch by the Touch Memory key for the time from 3 s. The maximum touch duration is not limited.

7.9.2 Single area controller mode

The screenshot shows the 'Security' configuration page in the CCU shell. The top bar includes 'CCU shell' and user information 'HOUSE admin@863833020335055 Log out'. On the left is a sidebar with links: Common, Control, Connections common parameters, Connections, Scheduler, System parameters, Security (selected), Inputs common parameters, Inputs, and Outputs. The main content area is titled 'Security' and contains two sections:

- ArmIn input mode**: A dropdown menu set to 'ARM/DISARM - pulse' and a 'Switching to ARM mode delay' set to '15 s'.
- Controlled inputs in PROTECT mode**: A table of checkboxes for inputs In1 through In8. In7 and In8 are checked.

Input	In1	In2	In3	In4	In5	In6	In7	In8
Controlled	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Figure 34: “Security” page in the single area controller mode, part 1

ArmIn input mode

ArmIn input mode setting

1. ARM/DISARM - pulse

Usually used to connect a non-latching button to the ArmIn input. The table of the arming mode change depending on the action:

Action	Current arming mode	Resulting arming mode
Pulse	DISARM	ARM
Pulse	PROTECT	DISARM
Pulse	ARM	DISARM

2. **ARM - input closing, DISARM - opening**

It can be used to connect a latch button to the ArmIn input or to pairing with another security system. The table of the arming mode change depending on the action:

Action	Current arming mode	Resulting arming mode
Closing	DISARM	ARM
Closing	PROTECT	PROTECT (no change)
Closing	ARM	ARM (no change)
Opening	DISARM	DISARM (no change)
Opening	PROTECT	DISARM
Opening	ARM	DISARM

3. **ARM/DISARM - Touch Memory**

The table of the arming mode change depending on the action and the role of the Touch Memory key:

Action	Key role	Current arming mode	Resulting arming mode
TM	ARM	DISARM	ARM
TM	ARM	PROTECT	PROTECT (no change)
TM	ARM	ARM	ARM (no change)
TM	DISARM	DISARM	DISARM (no change)
TM	DISARM	PROTECT	DISARM
TM	DISARM	ARM	DISARM
TM	ARM and DISARM	DISARM	ARM
TM	ARM and DISARM	PROTECT	DISARM
TM	ARM and DISARM	ARM	DISARM

4. **ARM/DISARM - Touch Memory, PROTECT/DISARM - pulse**

The table of the arming mode change depending on the action and the role of the Touch Memory key:

Action	Key role	Current arming mode	Resulting arming mode
Pulse	-	DISARM	PROTECT
Pulse	-	PROTECT	DISARM
Pulse	-	ARM	ARM (no change)
TM	ARM	DISARM	ARM
TM	ARM	PROTECT	PROTECT (no change)
TM	ARM	ARM	ARM (no change)
TM	DISARM	DISARM	DISARM (no change)
TM	DISARM	PROTECT	DISARM
TM	DISARM	ARM	DISARM
TM	ARM and DISARM	DISARM	ARM
TM	ARM and DISARM	PROTECT	DISARM
TM	ARM and DISARM	ARM	DISARM

5. **ARM/DISARM - Touch Memory, ARM - pulse**

The table of the arming mode change depending on the action and the role of the Touch Memory key:

Action	Key role	Current arming mode	Resulting arming mode
Pulse	-	DISARM	ARM
Pulse	-	PROTECT	PROTECT (no change)
Pulse	-	ARM	ARM (no change)
TM	ARM	DISARM	ARM
TM	ARM	PROTECT	PROTECT (no change)
TM	ARM	ARM	ARM (no change)
TM	DISARM	DISARM	DISARM (no change)
TM	DISARM	PROTECT	DISARM
TM	DISARM	ARM	DISARM
TM	ARM and DISARM	DISARM	ARM
TM	ARM and DISARM	PROTECT	DISARM
TM	ARM and DISARM	ARM	DISARM

Switching to ARM mode delay

If set to a nonzero value, when the ArmIn input is activated, the countdown begins, accompanied by pulses with a period of 1 s at the ArmOut output. The countdown occurs only when switching to the ARM mode using the ArmIn input. When the PROTECT mode is activated, no countdown occurs. This can be useful in cases where the Touch Memory key reader or arming button is in the armed area. This delay allows the owner to leave the armed area before switching to the ARM mode.

Controlled inputs in PROTECT mode

To use the PROTECT mode it is necessary to specify the inputs controlled in this arming mode. If the inputs are not selected, the switching to the PROTECT mode is impossible.

The screenshot displays the 'Security' configuration page. On the left is a sidebar with links: [Outputs](#), [Scenarios](#), [Profiles](#), [Service menu](#), [Configuration](#), [Firmware](#), [Voice messages](#), and [PLC](#). The main content area is divided into four sections:

- Countdown:** A list of seven items (Relay 1, Relay 2, Output 1, Output 2, Output 3, Output 4, Output 5) each with a dropdown menu showing '--'. A final dropdown menu is at the bottom.
- ARM:** A list of seven items (Relay 1, Relay 2, Output 1, Output 2, Output 3, Output 4, Output 5) each with a dropdown menu showing '--'. Below the list is a button labeled 'Apply profile 1'.
- PROTECT:** A list of seven items (Relay 1, Relay 2, Output 1, Output 2, Output 3, Output 4, Output 5) each with a dropdown menu showing '--'. Below the list is a button labeled 'Apply profile 2'.
- DISARM:** A list of seven items (Relay 1, Relay 2, Output 1, Output 2, Output 3, Output 4, Output 5) each with a dropdown menu showing '--'. Below the list is a button labeled 'Apply profile 3'.

Figure 35: “Security” page in the single area controller mode, part 2

Countdown

Allows to set the relays/outputs reaction and specify the profile applying when beginning of the countdown.

ARM

Allows to set the relays/outputs reaction and specify the profile applying when switching to the ARM mode.

PROTECT

Allows to set the relays/outputs reaction and specify the profile applying when switching to the PROTECT mode.

DISARM

Allows to set the relays/outputs reaction and specify the profile applying when switching to the DISARM mode.

Read key
Key code is reading. 7 s remaining.

No.	Key code	Key name	Role	Profile
1	BD003800A7C9C410	Alexander	ARM and DISARM	--
2	3479565A38ED3A9C	Alexey	ARM	--
3	0038595AA7638734	Peter	DISARM	--
4	019C355A38EB5E01	Olga	--	Profile 1
5	C900380738A03A67	John	--	Profile 2
6			--	--
7			--	--

Figure 36: “Security” page in the single area controller mode, part 3

Read key

When click on this button, the ArmIn input enters the key reading mode. The countdown begins, accompanied by the pulses at the ArmOur output with a period of 200 ms. During the countdown, it is necessary to touch the reader with the desired key. Upon successful reading, the key code is added to the free cell.

In the key reading mode, it is impossible to change the arming mode using the ArmIn input.

Touch Memory key list

Allows to manage the Touch Memory keys used to change the arming mode and apply the profile.

After changing the data in the Touch Memory key list, you must save the settings using the “Submit” button.

Key code

The key code must be 16 characters long, may contain digits and letters from the set: “A-F, a-f”. May be empty. The key code can be sent in SMS when changing the arming mode, for example: “ARM T:5E00565AA4539201”.

Key name

The key name must be between 1 and 16 characters, may contain letters, Cyrillic letters, digits, and symbols from the set: “”#%&’()*.,;<>@[]\^_’{|~”. May be empty. The key name can be sent in SMS when changing the arming mode, for example: “ARM T:Olga”. Used in the Viber and Telegram bots.

Role

Allows to set the key action to change the arming mode. The options are: ARM, DISARM, ARM and DISARM.

Profile

Specifies the profile applied with the corresponding Touch Memory key.

7.9.3 Multiple area controller mode

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Security

Area 1

Area name: AREA1

Arming mode is displayed at ArmOut output

ArmIn input mode

ARM - pulse > 3 s, DISARM - pulse < 3 s

Switching to ARM mode delay: 15 s

Binding inputs to area

In1	In2	In3	In4	In5	In6	In7	In8
--	--	--	WEAK	WEAK	--	STRONG	STRONG

Figure 37: “Security” page in the multiple area controller mode, part 1

Area N

Allows to select the desired area to view and change its settings.

Selecting the desired area without clicking the “Submit” button will result in the loss of the changes being made to the current area.

Area name

The area name must be between 1 and 16 characters, may contain letters, Cyrillic letters, digits and symbols from the set: “”#\$%&'()*+,-./:;<>@[]\^_‘{|}~”. The area name is case-insensitive. Used in the Viber and Telegram bots, in the SMS commands and SMS messages from the controller.

Display arming mode at output N

For the area 1, the arming mode is always displayed at the ArmOut output. For the areas 2-4, the display of arming mode at the outputs 1-3, respectively, can be enabled optionally.

ArmIn input mode

ArmIn input mode setting

The multiple area controller mode has certain characteristics for managing the areas arming mode. The explicit or implicit method is used to change the arming mode of the areas. The necessary method is automatically selected by the controller depending on the settings of the areas only, and not on their status.

Explicit method

It assumes that the user must explicitly specify to the controller the desired arming mode using the exposure duration: short — DISARM, long — ARM. The action options are: Pulse short/long, Touch Memory short/long. The explicit method works in cases:

- If the ArmIn input mode is 1 or 2 in any number of the areas when using the pulse action only.
- If the ArmIn input mode is 2 or 3 and the Touch Memory key is associated with several areas using the different roles.
- If the ArmIn input mode is 2 or 3 and the Touch Memory key is associated with several areas using the same role — ARM and DISARM.

Implicit method

It assumes that the arming mode change is carried out by the action without taking into account the exposure duration. The action options are: Touch Memory. The implicit method works in cases:

- If the ArmIn input mode is 2 or 3 and the Touch Memory key is associated with only one area using any role.
- If the ArmIn input mode is 2 or 3 and the Touch Memory key is associated with several areas using the same role — only ARM or only DISARM.

1. **ARM - pulse > 3 s, DISARM - pulse < 3 s**

Usually used to connect a non-latching button to the ArmIn input. The table of the arming mode change depending on the action for the explicit method:

Action	Current arming mode	Resulting arming mode
Pulse short	DISARM	DISARM (no change)
Pulse short	ARM	DISARM
Pulse long	DISARM	ARM
Pulse long	ARM	ARM (no change)

2. **ARM - pulse > 3 s, ARM/DISARM - Touch Memory**

The table of the arming mode change depending on the action “Pulse short/long” for the explicit method:

Action	Current arming mode	Resulting arming mode
Pulse short	DISARM	DISARM (no change)
Pulse short	ARM	ARM (no change)
Pulse long	DISARM	ARM
Pulse long	ARM	ARM (no change)

The table of the arming mode change depending on the action “Touch Memory short/long” for the explicit method:

Action	Key role	Current arming mode	Resulting arming mode
TM short	ARM (no action)	DISARM	DISARM (no change)
TM short	ARM (no action)	ARM	ARM (no change)
TM long	ARM	DISARM	ARM
TM long	ARM	ARM	ARM (no change)
TM short	DISARM	DISARM	DISARM (no change)
TM short	DISARM	ARM	DISARM
TM long	DISARM (no action)	DISARM	DISARM (no change)
TM long	DISARM (no action)	ARM	ARM (no change)
TM short	ARM and DISARM	DISARM	DISARM (no change)
TM short	ARM and DISARM	ARM	DISARM
TM long	ARM and DISARM	DISARM	ARM
TM long	ARM and DISARM	ARM	ARM (no change)

3. **ARM/DISARM - Touch Memory**

See the table of the arming mode change depending on the action “Touch Memory short/long” for the explicit method in the ArmIn input mode 2.

Switching to ARM mode delay

This setting works similarly to the setting of the single area controller mode, except that the countdown is accompanied by pulses not only at the ArmOut output, but also at the outputs 1-3 of the corresponding areas.

Binding inputs to area

To use the area it is necessary to bind the inputs controlled in this area. If the inputs are not bound, the arming mode change is allowed. The options are:

- -- — no binding;
- **WEAK** — weak binding (the input is controlled, if all the areas to which it is bound are in the ARM mode);

- **STRONG** — strong binding (the input is controlled, if at least one area to which it is bound is in the ARM mode).

With a mixed binding of one input to the different areas, the weak binding is considered strong. If the input is bound to only one area, the type of binding does not matter."

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Countdown

Relay 1 --
Relay 2 --
Output 1 --
Output 2 --
Output 3 --
Output 4 --
Output 5 --

--

ARM

Relay 1 --
Relay 2 --
Output 1 --
Output 2 --
Output 3 --
Output 4 --
Output 5 --

Apply profile 1

DISARM

Relay 1 --
Relay 2 --
Output 1 --
Output 2 --
Output 3 --
Output 4 --
Output 5 --

Apply profile 3

Figure 38: “Security” page in the multiple area controller mode, part 2

Countdown

Allows to set the relays/outputs reaction and specify the profile applying when beginning of the countdown.

ARM

Allows to set the relays/outputs reaction and specify the profile applying when the area switching to the ARM mode.

DISARM

Allows to set the relays/outputs reaction and specify the profile applying when the area switching to the DISARM mode.

<div>Read key</div> <div>Key code is reading. 7 s remaining.</div>				
No.	Key code	Key name	Role	Profile
1	BD003800A7C9C410	Alexander	ARM and DISARM	--
2	3479565A38ED3A9C	Alexey	ARM	--
3	0038595AA7638734	Peter	DISARM	--
4	019C355A38EB5E01	Olga	--	Profile 1
5	C900380738A03A67	John	--	Profile 2
6			--	--
7			--	--

Figure 39: “Security” page in the multiple area controller mode, part 3

Read key

This setting works similarly to the setting of the single area controller mode, except that the countdown is accompanied by pulses not only at the ArmOut output, but also at the outputs 1-3 of the corresponding areas.

Touch Memory key list

See the description of this setting in the single area controller mode.

7.10 Inputs common parameters

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Inputs common parameters

Inputs monitoring delay when turning on or exiting low-power mode: 30 s

Sensors power output 10VS

Mode: Always switched on

Inputs monitoring delay when sensors power on: 0 s

Duration of loop power reset in case of alarm: 40 s

Submit...

Figure 40: “Inputs common parameters” page

Inputs monitoring delay when turning on or exiting low-power mode

Allows to avoid false alarms from the sensors that take some time to go into a ready state after power is applied to them. For example, motion sensors. If the sensors are immediately ready for operation, you can set the value to “0 s”. This delay works for all inputs for which the “Sensors power source” parameter on the “Inputs” page is not equal to the “Sensors power output 10VS” value.

Sensors power output 10VS

For sensors powered from the 10VS output, it is necessary to set the “Sensors power source” parameter on the “Inputs” page to the “Sensors power output 10VS” value.

Mode

- **ARM/PROTECT - switched on, DISARM - switched off**

In this mode, the power at the 10VS output is switched on only in the ARM/PROTECT mode. This option gives some energy savings.

- **Always switched on**

In this mode, the power at the 10VS output is always switched on.

Inputs monitoring delay when sensors power on

Allows to avoid false alarms from sensors powered from the 10VS output, that take some time to go into a ready state after power is applied to them.

Duration of loop power reset in case of alarm

Low power consumption sensors can be powered directly from the input (by the loop). In this case, the sensor is connected by a two-wire circuit, which is both power supply and information. Traditionally, these are smoke detectors and water leak sensors. Some sensors require the power off after activation to go into a ready state. This setting allows to set the duration of the power reset on the loop.

For inputs 1-8, when sensors is powered by the loop, it is necessary to set the corresponding jumpers J1-J8 to the position 1-2. And set the “Sensors power source” parameter on the “Inputs” page to the “By loop with power reset” value.

E01.1
16 inp.

Inputs 9-16 do not have loop power capabilities.

When power is reset on the loop, all loop-powered sensors are turned off, and not just the active ones. Accordingly, the monitoring of all these sensors will be suspended until the power is restored on the loop.

7.11 Inputs

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Update period: 5 s

Input 1

☒ Enabled

Input type: Analog

Input name: SENSOR1

Active state name: ACTIVE

Passive state name: PASSIVE

Active range boundaries

Active range: Middle

3.33333 6.66667

4.68864

Conversion and calibration

Warning! For text SMS and bots only.

Desired input value at 0 V: 0

Desired input value at 10 V: 10

Desired input value at current voltage: Calibrate

Figure 41: “Inputs” page, part 1

Input N

Allows to select the desired input to view and change its settings.

Selecting the desired input without clicking the “Submit” button will result in the loss of the changes being made to the current input.

Copy settings from another input

Allows to easily copy settings from another input to the selected one. When copying settings from another input, the “Input name” field remains unchanged.

Enabled

Allows to completely disable the selected input without resetting its settings.

Input type

- **Discrete**

Used to connect sensors with relay output (motion sensors, magnetic contact sensors). The measurement units: volts in the range 0...10 V. In this case, there is no need to know the exact voltage at the input and only qualitative information about the input status is sent in SMS: active/passive. The alarm SMS example: “12:00 DOOR OPEN !”.

- **Analog**

Used to connect sensors with analog output (pressure sensors, liquid level sensors). Allows to convert the input voltage in the range 0...10 V to the measurement units of the connected sensor and calibrate it if necessary. In this case, only a linear conversion is possible. Thus, the operational measurement units are the measurement units of the connected sensor in the range specified in the "Conversion and calibration" group. In this case, qualitative and quantitative information about the input status is sent

in SMS. Also, SMS may contain information about the active range boundaries. The SMS example: "12:00 PRESSURE 2 [1.5:5] PASSIVE".

- **RTD-02**

Used to connect RTD-02 temperature sensor. The operational measurement units: degrees Celsius. It is a variation of the analog input type.

- **RTD-03**

Used to connect RTD-03 temperature sensor. The operational measurement units: degrees Celsius. The value calibration is available for this input type. It is a variation of the analog input type.

- **RTD-04**

Used to connect RTD-04 temperature sensor. The operational measurement units: degrees Celsius. It is a variation of the analog input type.

Input name

The input name must be between 1 and 16 characters, may contain letters, Cyrillic letters, digits and symbols from the set: `"#$%&'()*+,-;<>@[\\]^_`{|}~"`. The input name is case-insensitive. Used in the Viber and Telegram bots, in the SMS commands and SMS messages from the controller.

Active state name

The input active state name must be between 1 and 16 characters, may contain letters, Cyrillic letters, digits and symbols from the set: `"#$%&'()*+,-;<>@[\\]^_`{|}~"`. Used in the Viber and Telegram bots and SMS messages from the controller.

Passive state name

The input passive state name must be between 1 and 16 characters, may contain letters, Cyrillic letters, digits and symbols from the set: `"#$%&'()*+,-;<>@[\\]^_`{|}~"`. Used in the Viber and Telegram bots and SMS messages from the controller.

Consider the example of using names of the input and its states. Let's say the sensor monitors the state of the front door: open/closed. The input name to which the sensor is connected, set to the "DOOR" value. The input active state name is "OPEN". The input passive state name is "CLOSED". When requesting the door status with the command `" /pass DOOR ?"`, you will receive the response message "12:30 DOOR CLOSED" if the door is closed, or "12:30 DOOR OPEN" if the door is open.

Active range boundaries

Active range

- **Low or high**

If the input value is less than or equal to the low boundary or greater than or equal to the high boundary, it is considered that the input is active.

- **Low**

If the input value is less than or equal to the low boundary, it is considered that the input is active. There is no high boundary.

- **Middle**

If the input value is greater than or equal to the low boundary and less than or equal to the high boundary, it is considered that the input is active.

- **High**

If the input value is greater than or equal to the high boundary, it is considered that the input is active. There is no low boundary.

- **Low hysteresis**

The input takes the active state if the input value becomes less than or equal to the low boundary. The input takes the passive state if the input value becomes greater than or equal to the high boundary. The input state does not change (keeps the previous state) if the input value is greater than the low boundary and less than the high one.

- **High hysteresis**

The input takes the active state if the input value becomes greater than or equal to the high boundary. The input takes the passive state if the input value becomes less than or equal to the low boundary. The input state does not change (keeps the previous state) if the input value is greater than the low boundary and less than the high one.

Hysteresis ranges prevent frequent input state changes with a noisy input signal. It is useful when controlling the heater by air temperature. When using the low hysteresis range, the low zone will correspond to the heater turning off, the high zone to the heater turning on, and the middle zone will prevent frequent heater switching.

Setting active range boundaries

Allows to set the active range boundaries using the sliders. The selected slider can be moved with the mouse or keyboard arrows. To set the boundaries more precisely, you can enter data manually using the “...” buttons. Boundaries change with some step. This is due to the discrete nature of the ADC of the controller. The active range is displayed in blue.

Display current input value

Displays the current input value in relation to the scale of the setting active range boundaries. If the input value falls into the active range, it is displayed in red.

The color display of the input activity is used for simulation only and may not correspond to the actual activity state.

Conversion and calibration

This group of settings is available for the input types: Analog, RTD-03. Analog input type allows to convert the input voltage in the range 0...10 V to the measurement units of the connected sensor and calibrate it if necessary. When the input type is analog, conversion and calibration works for text SMS and bots only. The RTD-03 input type allows calibration only. Only linear conversion allowed.

Desired input value at 0 V

Sets the desired value of the connected sensor in its measurement units at the 0 V for conversion purposes.

Desired input value at 10 V

Sets the desired value of the connected sensor in its measurement units at the 10 V for conversion purposes.

Desired input value at current voltage

Allows to enter the desired value of the connected sensor in its measurement units at the current voltage for calibration purposes.

Calibrate

Uses the entered desired input value at the current voltage to adjust the desired input values at the 0 V and 10 V.

Conversion and calibration are carried out in two stages. First, the input voltage is converted to the measurement units of the connected sensor. For this, the desired input values are set at the 0 V and 10 V. They define the coefficients of the linear equation:

$$T = T_0 + \frac{T_{10} - T_0}{10} U_{\text{inp}}$$

Where T_0 is the desired input value at the 0 V, T_{10} is the desired input value at the 10 V, U_{inp} is the input voltage, T is the value of the connected sensor in its measurement units.

Then, if necessary, the sensor is calibrated. For this, set the desired input value at the current voltage and press the “Calibrate” button. After that, the desired values at the 0 V and 10 V (T_0 and T_{10} , respectively) are automatically adjusted so that the current converted input value becomes equal to the desired one. In fact, there is the parallel shift of the line up or down. The calibration value itself is not saved. Calibration can only be used after setting the desired values at the 0 V and 10 V, i.e. after conversion.

Example 1. Mains voltage measurement.

Consider the example when a transformer power source is used as a voltage sensor, having the constant voltage of 0...10 V at the output, with the input voltage of 0...250 V.

Active range boundaries

Active range: Low or high

...

200.000

117.277

229.976

...

Conversion and calibration

Warning! For text SMS and bots only.

Desired input value at 0 V:

Desired input value at 10 V:

Desired input value at current voltage:

Figure 42: “Inputs” page, example 1

Set the input type to the “Analog” value. Set the desired input value at the 0 V to 0, at the 10 V to 250. Set the active range to the “Low or high” value, the active range boundaries to 200 and 230. Thus, when the mains voltage goes out of range 200...230 V, the alarm message will be generated. In this case, the text SMS to the user will contain the real value of the mains voltage at the time of the message generation.

Example 2. Temperature measurement.

Consider the example when a third-party temperature sensor with the linear characteristic and measurement range of -40...120°C is used.

Active range boundaries

Active range: Low or high

...

7.00366

30.0171

...

35.0574

Conversion and calibration

Warning! For text SMS and bots only.

Desired input value at 0 V: -40

Desired input value at 10 V: 120

Desired input value at current voltage: Calibrate

Figure 43: “Inputs” page, example 2

Set the input type to the “Analog” value. Set the desired input value at the 0 V to -40, at the 10 V to 120. Set the active range to the “Low or high” value, the active range boundaries to 7 and 30. Thus, when the temperature goes out of range 7...30°C, the alarm message will be generated. In this case, the text SMS to the user will contain the real value of the temperature in degrees Celsius at the time of the message generation. If calibration of the temperature sensor is needed, it is necessary to install a reference thermometer close to the temperature sensor, enter the readings of this thermometer in the “Desired input value at current voltage” field and click the “Calibrate” button. After that, the desired values at the 0 V and 10 V will be adjusted so that the current temperature sensor value becomes equal to the reference thermometer.

Example 3. Reverse measurement range.

Consider the example when a sensor with the reverse characteristic is used, which measures a certain value in the range 0...1000 units, with the output voltage of 10...0 V.

Active range boundaries

Active range: Low or high

...

699.878

299.878

...

484.982

Conversion and calibration

Warning! For text SMS and bots only.

Desired input value at 0 V:

Desired input value at 10 V:

Desired input value at current voltage:

Calibrate

Figure 44: “Inputs” page, example 3

Set the input type to the “Analog” value. Set the desired input value at the 0 V to 1000, at the 10 V to 0. Set the active range to the “Low or high” value, the active range boundaries to 700 and 300. Thus, when the measurement value goes out of range 700...300 units, the alarm message will be generated. In this case, the text SMS to the user will contain the real value in measurement units at the time of the message generation.

Sensors power source: Other

☐ **Round-the-clock monitoring**

Discard pulses shorter than: 240 ms

False events filter

Minimum required activations number: 1

During: 10 s

Delay of alarms generation and relays/outputs reaction: 0 s

Delay of monitoring recovery after alarm: 0 min

Maximum alarms number in one arming session: No limit

☐ **Do not switch to armed mode if input is active**

Figure 45: “Inputs” page, part 2

Sensors power source

- **Sensors power output 10VS**

This value must be used when the sensor is powered by the 10VS controller output and the 10VS output mode on the “Inputs common parameters” page is set to the “ARM/PROTECT - switched on, DISARM - switched off” value. In this case, after switching to the ARM/PROTECT mode, the input monitoring will be delayed for the time specified in the “Inputs monitoring delay when sensors power on” setting on the “Inputs common parameters” page.

- **By loop with power reset**

This value must be used when the sensor is powered directly from the input (by the loop). In this case, when the sensor is activated, the power will be reset for the time specified in the “Duration of loop power reset in case of alarm” setting on the “Inputs common parameters” page.

- **Other**

This value must be used when the sensor is powered by the ExtPwr output, a third-party source, or does not require power.

Round-the-clock monitoring

If checked, the input is monitored regardless of the arming mode. Use this setting to connect fire sensors, water leak sensors, gas sensors.

Discard pulses shorter than

It is intended to filter the input signal noise. When the input state is changed for a time shorter than specified in this parameter, no change of the input state is registered. For example, when laying a signal wire near a power cable, interference may occur. To eliminate the interference effect, it is recommended to set the value to 660...840 ms. The value of 120...240 ms is sufficient in most cases.

False events filter

It is intended to filter false activations. When detecting exposure, it is assumed that the sensor will generate several frequently repeated pulses. In this case, rare single pulses are considered false.

The false events filter cannot be used when the active state of the sensor cannot be frequently repeated in nature. For example, when connecting a fire detector with the loop break monitoring, if the wiring is damaged, the active state will be constant.

When using loop-powered sensors with the reset, it is necessary to take into account the time of the power reset when setting up the false events filter.

Minimum required activations number

Sets the minimum required activations number to detect input activity. If set to “1”, the false events filter is disabled.

During

Sets the time during which the minimum required activations number is expected.

Delay of alarms generation and relays/outputs reaction

It is intended for cases when the Touch Memory key reader or button is in the armed area. This delay allows the owner to disarm the object without generating the alarm. At the value other than zero, the controller reaction to the input switching to the active state is delayed for the specified time. If during this time the object is disarmed, the event is canceled. The input switching to the passive state is not delayed with this setting. If the reaction to the input switching to the both states is required, using this delay is not recommended.

Delay of monitoring recovery after alarm

It is intended to prevent frequent notifications when the sensor or wiring malfunctions and the input is in the active (stuck) state for a long time. When the input is activated, the event is generated, after which the monitoring recovery countdown begins. Until the countdown ends, the single input switching to the passive state also generates the event, however, subsequent changes of the input state are ignored. If at the end of the countdown the input is in the active state, the event generates and the new monitoring recovery countdown begins. If at the end of the countdown the input is in the passive state, the event generation does not occur and the monitoring recovery countdown does not begin. If set to zero, the delay of input monitoring recovery is disabled and each input state change generates the event.

Maximum alarms number in one arming session

It is intended to limit the number of notifications in the single arming session and reduce costs when the sensor or wiring malfunctions. After generating the specified number of alarms, the input will be blocked until the next switching to the ARM/PROTECT mode. When switching to the ARM/PROTECT mode, the alarm counter is reset to zero.

Do not switch to armed mode if input is active

If the parameter is checked and the input is active, the controller cannot switch to the ARM/PROTECT mode using the ArmIn input. However, other methods of arming are not blocked. If blocking occurs, the active input number is displayed by the number of flashes with a period of 0.6 s every 1.5 s at the ArmOut output. This setting is useful if, for example, the user has not closed the window and is trying to arm the room. Without eliminating the cause of input activity, the user will not be able to arm the room using the ArmIn input.

When alarm occurs

Establish connection to communication via external intercom:
--

All relays/outputs are controlled by:
alarm event with limit in one arming session

Reaction to input state change

	Input active	Input passive
Relay 1	On	--
Relay 2	--	--
Output 1	--	--
Output 2	--	--
Output 3	--	--
Output 4	--	--
Output 5	--	--

Figure 46: “Inputs” page, part 3

When alarm occurs

Establish connection to communication via external intercom

When the connection is selected and the alarm occurs, the controller makes the voice call by the connection phone number and, after picking up the phone by the user, connects the external intercom. This feature allows to use the intercom to talk with the guest when the owner is absent at the arming object. At the same time, the guest talking with the owner does not suspect his absence. To connect the intercom to the controller, an additional interface device may be required. If the “Outgoing voice connection duration” setting in the selected connection is set to the “Unlimited, going to voice menu (DTMF control)” value, then the user can switch to the voice menu for DTMF control using the “0” button on the phone.

All relays/outputs are controlled by

- input directly**

The relays/outputs are controlled by the input directly without taking into account the arming mode and alarm events.

- alarm event with limit in one arming session**

When the input switches to the active state, the relays/outputs are controlled by the alarm event, taking into account the “Maximum alarms number in one arming session” parameter. When the input switches to the passive state, the relays/outputs are controlled by the input directly, taking into account the arming mode.

- alarm event without limit in one arming session**

When the input switches to the active state, the relays/outputs are controlled by the alarm event without taking into account the “Maximum alarms number in one arming session” parameter. When the input switches to the passive state, the relays/outputs are controlled by the input directly, taking into account the arming mode.

Reaction to input state change

Allows to set the reaction to the input switching to the active/passive state. It may be useful for connecting sirens and other devices.

7.12 Outputs

Figure 47: “Outputs” page

Relay/Output N

Allows to select the desired output to view and change its settings.

Selecting the desired output without clicking the “Submit” button will result in the loss of the changes being made to the current output.

Copy settings from another output

Allows to easily copy settings from another output to the selected one. When copying settings from another output, the “Output name” field remains unchanged.

Enabled

Allows to completely disable the selected output without resetting its settings.

Inversion

If the parameter is checked, the physical state of the output will be opposite to the logical one. For example, if the user gives the command to switch on the output, he receives a confirmation that the output is switched on, however, the physical state of the output is switched off. And vice versa.

Output name

The output name must be between 1 and 16 characters, may contain letters, Cyrillic letters, digits and symbols from the set: ““#%&’()*.,;<>@[]\^_‘{|}~””. The output name is case-insensitive. Used in the Viber and Telegram bots, in the SMS commands and SMS messages from the controller.

Active state name

The output active state name must be between 1 and 16 characters, may contain letters, Cyrillic letters, digits and symbols from the set: ““#%&’()*.,;<>@[]\^_‘{|}~””. The output active state name is case-insensitive. Used in the Viber and Telegram bots, in the SMS commands and SMS messages from the controller.

Passive state name

The output passive state name must be between 1 and 16 characters, may contain letters, Cyrillic letters, digits and symbols from the set: “”#\$%&’()*+,.;<>@[\\]^_‘{|~”. The output passive state name is case-insensitive. Used in the Viber and Telegram bots, in the SMS commands and SMS messages from the controller.

Consider the example of using names of the output and its states. Let’s say the relay controls the electromagnetic lock: off — open, on — closed. The output name to which the lock is connected, set to the “LOCK” value. The output active state name is “CLOSED”. The output passive state name is “OPEN”. Now you can open/close the lock and request its status. To open the lock, you give the command “/pass LOCK OPEN”. To close the lock, you give the command “/pass LOCK CLOSED”. To request the status of the lock, you give the command “/pass LOCK ?” and get the response “12:30 LOCK CLOSED”.

Enable remote control

If the parameter is checked, remote control of this output is enabled. When unchecked — disabled. Regardless of the value of this setting, control from the internal logic of the controller is enabled.

Show switch on command in bot menu "Commands"

If the parameter is checked, the output switch on command is displayed in the bot special menu “Commands” as the string consisting of the output name and the active state name.

Show switch off command in bot menu "Commands"

If the parameter is checked, the output switch off command is displayed in the bot special menu “Commands” as the string consisting of the output name and the passive state name.

Output reaction to remote switch on command

This setting defines the output reaction to the remote switch on command and does not affect control from the internal logic of the controller.

- **On**
The remote switch on command switches on the output. The remote switch off command switches off the output.
- **Scenario N**
The remote switch on command runs the selected scenario on the output. The remote switch off command stops the scenario and switches off the output.

7.13 Scenarios

Scenario is a user-defined rectangular signal at the controller outputs with the ability to set the initial level and duration of the on and off state in increments of 100 ms. The scenario can be one-off, cyclic, and infinite. For cyclic scenario, the number of cycles can be specified.

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Scenarios

Scenario part duration = "cell value" * 100 ms.

No.	Infin.	Cycles	High	1	2	3	4	5	6	7	8	9	10	11
1	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
2	<input type="checkbox"/>	1	<input type="checkbox"/>	30	5	0	0	0	0	0	0	0	0	0
3	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	3	3	3	15	0	0	0	0	0	0	0
4	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	6000	3000	7000	2000	10000	600	0	0	0	0	0
5	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
6	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
7	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
8	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
9	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
10	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
11	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
12	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
13	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
14	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0

Scenario 3:




Figure 48: "Scenarios" page

Scenarios setup table

Allows to specify up to 14 scenarios. Each row of the table defines one scenario. When you select any row cell, the scenario with the number of this row is displayed graphically in the bottom.

No.

Scenario number. Used to set the relay/output reaction.

Infin.

If the parameter is checked, the selected scenario is cyclic and infinite. If the parameter is unchecked, the scenario is finite.

Cycles

It can take the numerical value in the range of 1...65535. Specifies the number of cycles of the selected scenario. If the parameter "Infin." is checked, the setting "Cycles" is not available. If the value is 1, the scenario is not cyclical.

High

Sets the initial level of the scenario (level of the first part). If the parameter is checked, the initial level is high; if it is unchecked, the initial level is low.

1...16

Sets the scenario part duration in increments of 100 ms. It can take the numerical value in the range of 0...32767. The actual scenario part duration in milliseconds is equal to the cell value multiplied by 100 ms. The maximum number of the scenario parts is 16. The level of the next scenario part is opposite to the level of the previous part. If the cell value is 0, then this scenario part and all subsequent ones, regardless of the value of their cells, are not performed. If the scenario is cyclic, then the zero cell value is the sign of the next cycle beginning. Thus, the zero value of the first cell actually disables the scenario completely.

Scenario graphical display

The following elements of the selected scenario are displayed in graphical form:

- scenario number;
- initial level;
- number and levels of active parts;
- sign of cyclicity.

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Scenarios

Scenario part duration = "cell value" * 100 ms.

No.	Infin.	Cycles	High	1	2	3	4	5	6	7	8	9	10	11
1	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
2	<input type="checkbox"/>	1	<input type="checkbox"/>	30	5	0	0	0	0	0	0	0	0	0
3	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	3	3	3	15	0	0	0	0	0	0	0
4	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	6000	3000	7000	2000	10000	600	0	0	0	0	0
5	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
6	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
7	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
8	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
9	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
10	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
11	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
12	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
13	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
14	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0

Scenario 1:

Submit...

Figure 49: "Scenarios" page, example 1

Example 1. Single pulse generation.

Scenario 1 is not cyclic, it runs once, the initial level is high. When running scenario 1, the output will be switched to the active state for 100 ms, after which it will be switched to the passive state. This method can be used to generate the single pulse of a given duration.

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Scenarios

Scenario part duration = "cell value" * 100 ms.

No.	Infin.	Cycles	High	1	2	3	4	5	6	7	8	9	10	11
1	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
2	<input type="checkbox"/>	1	<input type="checkbox"/>	30	5	0	0	0	0	0	0	0	0	0
3	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	3	3	3	15	0	0	0	0	0	0	0
4	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	6000	3000	7000	2000	10000	600	0	0	0	0	0
5	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
6	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
7	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
8	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
9	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
10	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
11	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
12	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
13	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
14	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0

Scenario 2:

Submit...

Figure 50: "Scenarios" page, example 2

Example 2. The single pulse generation with a delay before it.

Scenario 2 is not cyclic, it runs once, the initial level is low. When running scenario 2, the output will be switched to the passive state for 3 s, after which the pulse of 500 ms duration will be generated. This method can be used to generate the single delayed pulse.

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Scenarios

Scenario part duration = "cell value" * 100 ms.

No.	Infin.	Cycles	High	1	2	3	4	5	6	7	8	9	10	11
1	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
2	<input type="checkbox"/>	1	<input type="checkbox"/>	30	5	0	0	0	0	0	0	0	0	0
3	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	3	3	3	15	0	0	0	0	0	0	0
4	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	6000	3000	7000	2000	10000	600	0	0	0	0	0
5	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
6	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
7	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
8	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
9	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
10	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
11	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
12	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
13	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
14	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0

Scenario 3:




Figure 51: "Scenarios" page, example 3

Example 3. The generation of the infinite sequence of groups of identical pulses with the pause between groups.

Scenario 3 is cyclic and infinite, the initial level is high. When running scenario 3, at the output will be generated the group of two pulses of 300 ms each with the pause of 300 ms between them. After which the output will be switched to the passive state for 1.5 s. Then the group of pulses will repeat. This method can be used to display the activated input number.

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Scenarios

Scenario part duration = "cell value" * 100 ms.

No.	Infin.	Cycles	High	1	2	3	4	5	6	7	8	9	10	11
1	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
2	<input type="checkbox"/>	1	<input type="checkbox"/>	30	5	0	0	0	0	0	0	0	0	0
3	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	3	3	3	15	0	0	0	0	0	0	0
4	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	8000	3000	7000	2000	10000	600	0	0	0	0	0
5	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
6	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
7	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
8	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
9	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
10	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
11	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
12	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
13	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0
14	<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	1	0	0	0	0	0	0	0	0	0	0

Scenario 4:

Figure 52: “Scenarios” page, example 4

Example 4. The generation of the infinite sequence of groups of different pulses with long duration.

Scenario 4 is cyclic and infinite, the initial level is high. When running scenario 4, at the output will be generated the group of three pulses: 10 min, 11.7 min, and 16.7 min with the pause of 5 min and 3.3 min between them. After which the output will be switched to the passive state for 1 min. Then the group of pulses will repeat. This method can be used to create the effect of people presence in the room. If you fill all 16 cells with different values, the external observer will not be able to detect the pattern.

7.14 Profiles

The profile is the set of settings and actions combined into the group that can be applied simultaneously in cases: at the user's command, when changing the arming mode, or at the specified time according to the task scheduler. When applying the profile, the new values replace the previously set ones, after which the controller starts working with the new values. The profile also allows to specify the relays/outputs reaction if necessary. The most common use of profiles is the remote change of heating modes (ECONOMY, COMFORT) in the house.

The profile is not a controller mode. There is no concept — the current profile. It is not possible to request information from the controller about which profile is currently active. However, the profile applying moment is the event, information about which is sent to the user.

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Profiles

Profile 1 Copy settings from another profile

☒ Enabled

Profile name:

☒ Show in bot menu "Commands"

Active range boundaries

1	<input checked="" type="checkbox"/>	<input type="text" value="-23.82 °C"/>	<input type="range" value="50"/>	<input type="text" value="100.04 °C"/>	<input type="button" value="..."/>
2	<input checked="" type="checkbox"/>	<input type="text" value="0.99 °C"/>	<input type="range" value="50"/>	<input type="text" value="61.79 °C"/>	<input type="button" value="..."/>
3	<input checked="" type="checkbox"/>		<input type="range" value="50"/>	<input type="text" value="8.19 V"/>	<input type="button" value="..."/>
4	<input type="checkbox"/>	<input type="text" value="3.33 V"/>	<input type="range" value="50"/>	<input type="text" value="6.67 V"/>	<input type="button" value="..."/>
5	<input checked="" type="checkbox"/>	<input type="text" value="1.15 V"/>	<input type="range" value="50"/>		
6	<input type="checkbox"/>	<input type="text" value="3.33 V"/>	<input type="range" value="50"/>	<input type="text" value="6.67 V"/>	<input type="button" value="..."/>
7	<input type="checkbox"/>	<input type="text" value="3.33 V"/>	<input type="range" value="50"/>	<input type="text" value="6.67 V"/>	<input type="button" value="..."/>
8	<input type="checkbox"/>	<input type="text" value="3.33 V"/>	<input type="range" value="50"/>	<input type="text" value="6.67 V"/>	<input type="button" value="..."/>

Relays/outputs reaction

Relay 1

Relay 2

Output 1

Output 2

Output 3

Output 4

Output 5

Figure 53: "Profiles" page

Profile N

Allows to select the desired profile to view and change its settings.

Selecting the desired profile without clicking the "Submit" button will result in the loss of the changes being made to the current profile.

Copy settings from another profile

Allows to easily copy settings from another profile to the selected one. When copying settings from another profile, the "Profile name" field remains unchanged.

Enabled

Allows to completely disable the selected profile without resetting its settings.

Profile name

The profile name must be between 1 and 16 characters, may contain letters, Cyrillic letters, digits and symbols from the set: `"'#$%&'()*<.>@[]\^_`{|}~`. The profile name is case-insensitive. Used in the Viber and Telegram bots, in the SMS commands and SMS messages from the controller.

Show in bot menu "Commands"

If the parameter is checked, the profile applying command is displayed in the bot special menu "Commands" as

the string containing the profile name.

Active range boundaries

Defines the active range boundaries for all inputs of the controller.

Input number

Displays the input number.

Enabling input settings

If checked, the active range boundaries specified for the input will be set when applying the profile. If unchecked, applying the profile will not affect the input.

Setting active range boundaries

Allows to set the active range boundaries of the input using the sliders. The selected slider can be moved with the mouse or keyboard arrows. To set the boundaries more precisely, you can enter data manually using the “...” buttons. Boundaries change with some step. This is due to the discrete nature of the ADC of the controller. The active range is displayed in blue.

Relays/outputs reaction

Allows to set the relays/outputs reaction when applying the profile.

7.15 Gate control

The gate control function is available only in controllers with modification GATE. This feature allows to organize the control of a gate or other actuator for a large number of users. The maximum number of users is 4000. The gate is controlled by the user call without picking up the phone, with the exception of the special mode.

In the special mode, the users list is not stored in the controller, it is controlled by the cellular operator. In the special mode, the controller picks up the phone for a short time. This mode is activated when the user with the phone “000” is created in the gate control list. In this case, the call from any phone not form the gate control list results in the relays/outputs reaction specified for the user “000”. The call from the phone from the gate control list results in the relays/outputs reaction specified for this user.

CCU shell
HOUSE admin@863833020335055 Log out

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Gate control

Open file
Clear list
Refresh from controller
Download

	No.	Name	Phone	R1	R2	O1	O2
				--	--	--	--
	1	John	+79022222222	S1	--	--	--
	2	Olga	+79033333333	S1	--	--	--
	3			--	--	--	--
	4			--	--	--	--
	5			--	--	--	--
	6			--	--	--	--
	7			--	--	--	--
	8			--	--	--	--
	9			--	--	--	--
	10			--	--	--	--

Pages: 1 2 3 4 5 6 7 8 9 10 ... Next Last 1 of 40

Submit...

Figure 54: “Gate control” page

Open file

Allows to open the text .txt file with the tab separated values for loading into the gate control list editor. At the same time, all entered information is erased from the gate control list editor.

Clear list

When the button is clicked, the gate control list editor is cleared.

Refresh from controller

When the button is clicked, the gate control list is downloaded from the controller to the list editor. At the same time, all entered information is erased from the gate control list editor.

Download

Allows to download and save the gate control list from the controller to the text .txt file with the tab separated values. This feature can be useful for creating the backup copy of the list or for its subsequent uploading to another controller. To save the list to the file, right-click on the “Download” link and select “Save Link As...” in the opened menu. The gate control list can be edited in the Microsoft Excel.

Columns of the gate control list editor

The first column: filtering and row editing buttons

When clicking on the first column header, the filters row is activated or deactivated. The first cell of the filters row contains the “Search” and “Clear filter” buttons. The first cell of the user row contains the buttons:

- in view mode: “Edit” and “Delete”;
- in edit mode: “Update” and “Cancel edit”.

No.

Displays the sequence number of the user. When clicking on the column header, switching between sorting modes by this column takes place.

Name

Specifies the user name. When clicking on the column header, switching between sorting modes by this column takes place. The name must be between 1 and 16 characters, may contain letters, Cyrillic letters, digits and symbols from the set: “”#\$\$%&'()*;,.:;<>@[]\^_‘{|~”. May be empty. Used to identify the user by the administrator.

Phone

Specifies the user phone number. When clicking on the column header, switching between sorting modes by this column takes place. The phone number must be between 7 and 15 digits with “+” or between 3 and 15 digits without “+”. May be empty. If empty, has no effect on the relays/outputs. If the value is “000”, the special mode is activated. Used to identify the user when an incoming call.

R1, R2, O1-ON

Specifies the reaction of the corresponding relay/output to the incoming user call. The relay/output can be switched on “ON”, switched off “OFF” or controlled by the scenario “S1-S14”. The relay/output reaction may be unset “--”.

7.15.1 Working with the gate control list editor**Filtration**

To activate the filters row, click on the first column header. The filters row allows to select users by several criteria. The filtering criteria are specified in the corresponding cells of the filters row. To apply the filter after specifying the filtering criteria, press the “Enter” key or click the “Search” button in the first cell. To cancel the filter, click the “Clear filter” button in the first cell. Deactivating the filters row does not cancel the filter.

Editing user

To switch from view mode to row edit mode, either click the “Edit” button in the first cell, or click any other cell of the user row. To save changes, press the “Enter” key or click the “Update” button in the first cell. To cancel the changes, press the “Esc” key or click the “Cancel” button in the first cell.

In the row edit mode, when you click on a cell in another row, unsaved changes will be discarded.

Deleting user

To delete the user, in the view mode, click the “Delete” button in the first cell of the user row.

Navigation

One page of the user list displays one hundred users. Navigation through the pages of the user list is carried out using the special panel at the bottom of the editor.

After editing the user list, you must save the data using the “Submit” button.

7.15.2 Editing the gate control list in the Microsoft Excel

1. Download and save the gate control list to the ccu_gate_phones.txt file.

CCU shell ■■■■■ HOUSE admin@863833020335055 [Log out](#)

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Gate control

Open file
Clear list
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	No.	Name	Phone	
🔍				
🔍 🗑️				
✏️ 🗑️	1	John	+7902222222	
✏️ 🗑️	2	Olga	+7903333333	
✏️ 🗑️	3			
✏️ 🗑️	4			
✏️ 🗑️	5			
✏️ 🗑️	6			
✏️ 🗑️	7			
✏️ 🗑️	8			
✏️ 🗑️	9			

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Submit...

Refresh from controller
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[Open link in new tab](#)
[Open link in new window](#)
[Open link in incognito window](#)
[Save link as...](#) ➔
[Copy link address](#)
[Inspect](#) Ctrl+Shift+I

Figure 55: Saving the gate control list to the ccu_gate_phones.txt file

2. Start Microsoft Excel. Using the menu “File->Open...” navigate to the folder with the saved file ccu_gate_phones.txt. In the document open dialog, set the file type “Text Files (...)”. Select the ccu_gate_phones.txt file and open it.

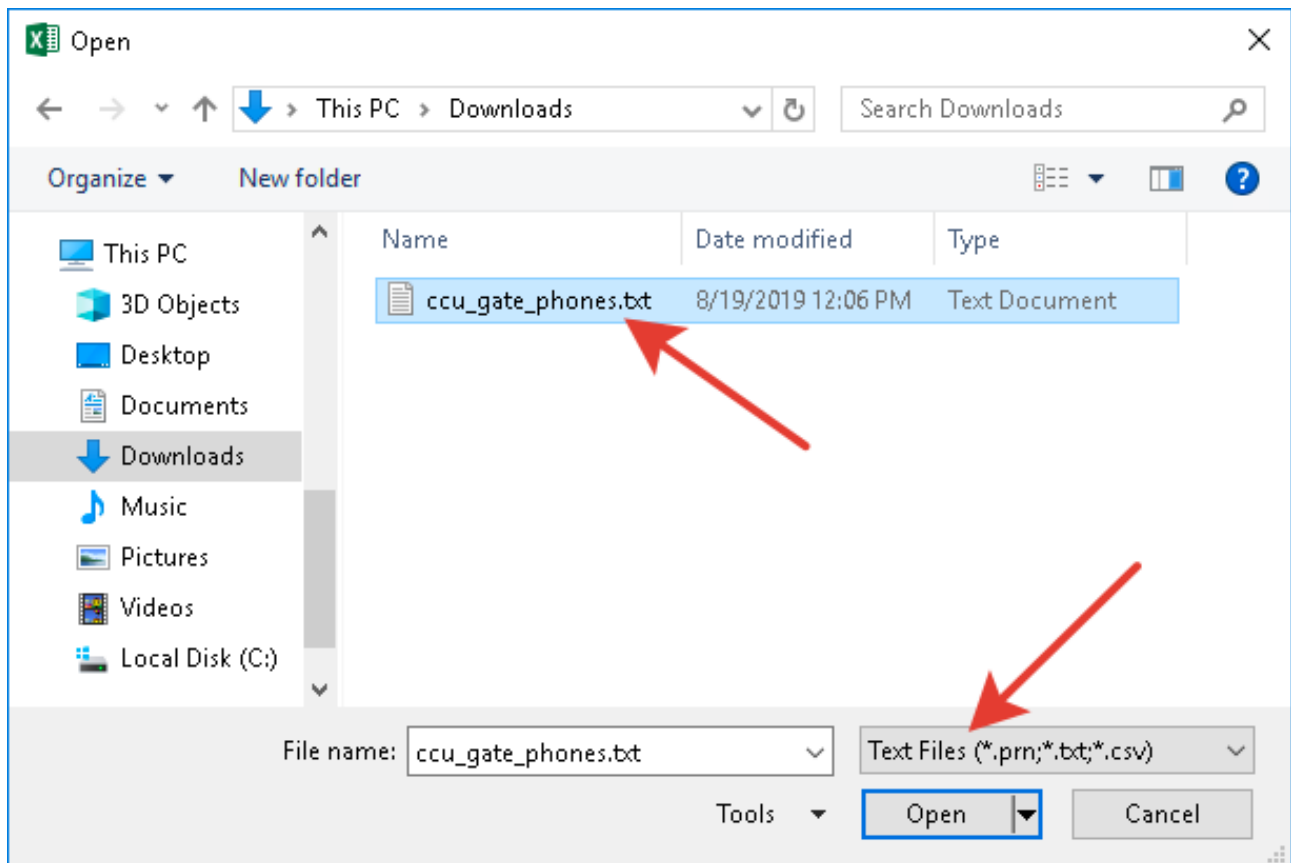


Figure 56: Opening the ccu_gate_phones.txt file in the Microsoft Excel

3. In the opened text import wizard of the Microsoft Excel, set the required parameters as shown in the figures below. In step 3, using the mouse select the leftmost column, then holding the “Shift” key select the rightmost column. This will select all columns. Then set the column data format to “Text” for all selected columns.

Text Import Wizard - Step 1 of 3

The Text Wizard has determined that your data is Delimited.
If this is correct, choose Next, or choose the data type that best describes your data.

Original data type

Choose the file type that best describes your data:

☒ Delimited - Characters such as commas or tabs separate each field.

☐ Fixed width - Fields are aligned in columns with spaces between each field.

Start import at row: 1 File origin: 65001 : Unicode (UTF-8)

☐ My data has headers.

Preview of file C:\Users\Stas\Downloads\ccu_gate_phones.txt.

1	John+7902222222S1
2	Dlga+7903333333S1
3	
4	
5	

< >


Cancel < Back Next > Finish

Figure 57: Text import wizard of the Microsoft Excel, step 1

Text Import Wizard - Step 2 of 3

This screen lets you set the delimiters your data contains. You can see how your text is affected in the preview below.

Delimiters

☒ Tab 

☐ Semicolon

☐ Comma

☐ Space

☐ Other:

☐ Treat consecutive delimiters as one

Text qualifier: "

Data preview

John	+7902222222	\$1						
Olga	+7903333333	\$1						

Cancel < Back **Next >** Finish

Figure 58: Text import wizard of the Microsoft Excel, step 2

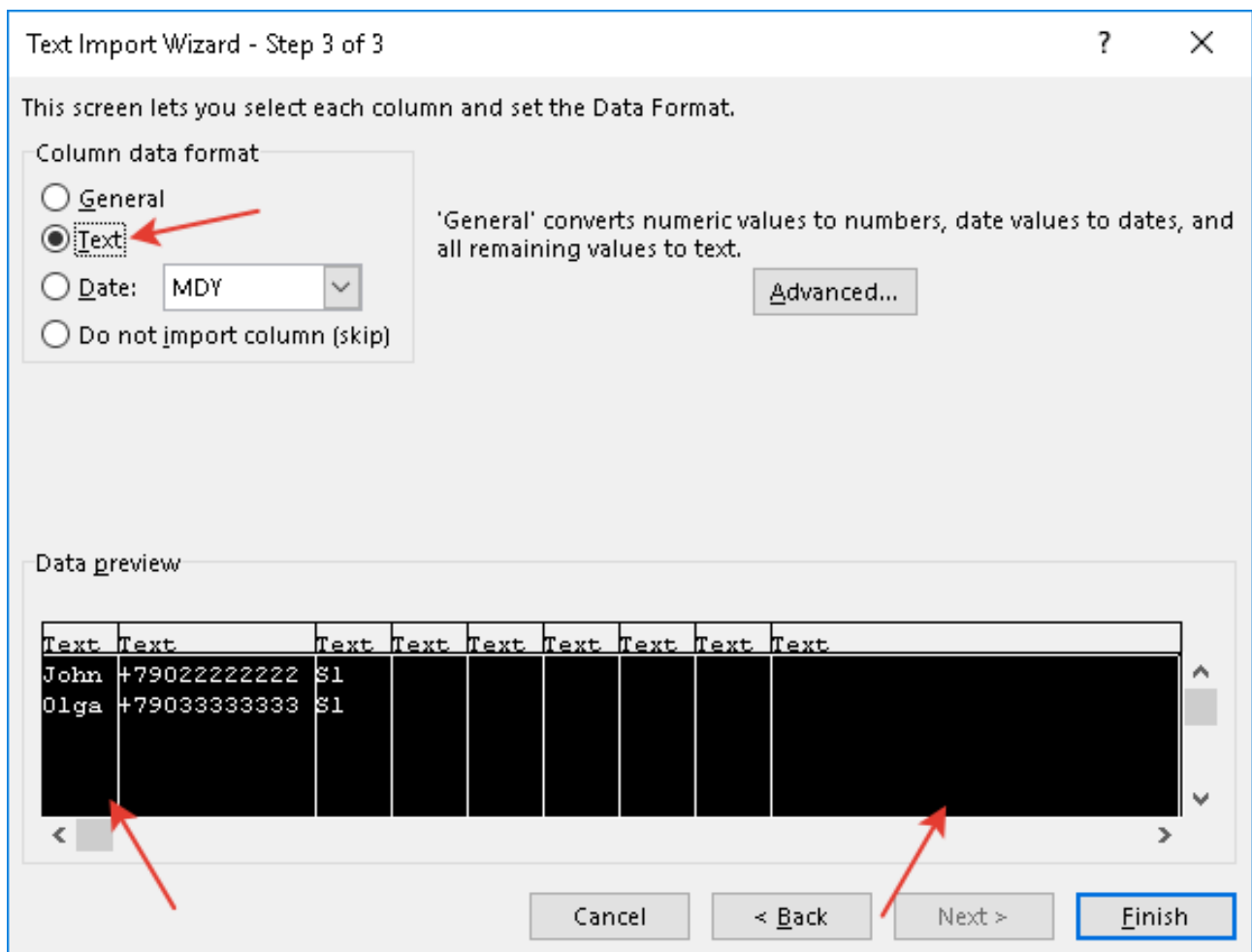


Figure 59: Text import wizard of the Microsoft Excel, step 3

- Edit the file. The number of used columns must not exceed the number of columns in the control list editor. The number of used rows must not exceed 4000. The valid character set and data length in the Excel columns matches to those in the columns of the control list editor, see the description above.
- Using the menu "File->Save As...", select the location to save the file. In the document save dialog, set the file type "Unicode Text (*.txt)".

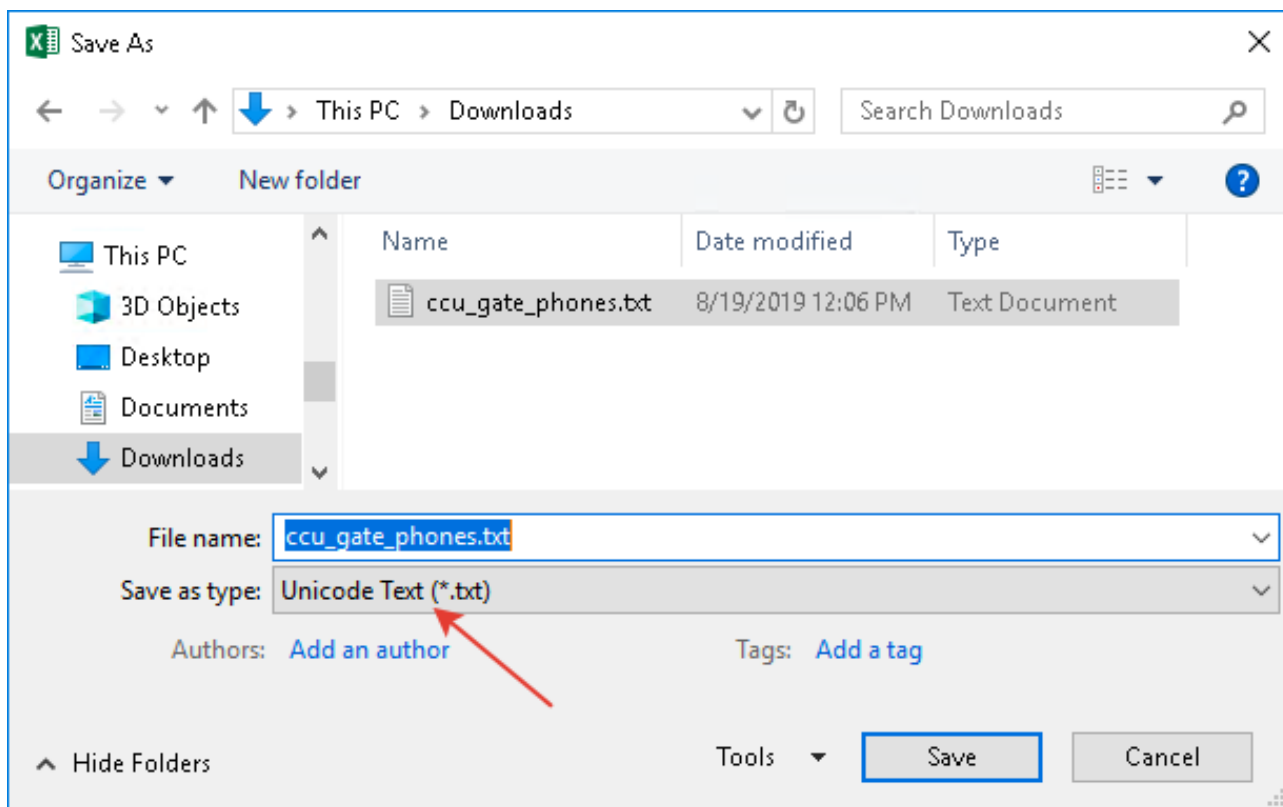


Figure 60: Saving the file in the Microsoft Excel

6. Go to the controller configurator to the “Gate control” page. Using the “Open file” button, open the file saved in the Microsoft Excel. Click the “Submit...” button to save the control list to the controller.

7.16 Service menu

This page is intended for advanced users or customer service. Do not change these settings without the need.

Figure 61: “Service menu” page

Extension board

The controller functions extension board (CFEB) is installed on the bottom side of the controller main board. After installing the board, select the appropriate type of CFEB in this setting. After removing the board, select “_ _”.

- **--**
CFEB is not installed.
- **E01.1**
Inputs extension board E01.1 is installed.

Multiple area mode

If the parameter is checked, the controller operates in the multiple area mode. If unchecked, in the single area mode.

Clock calibration

Allows to change the speed of the built-in clock of the controller.

Correction period, s

It can take the numerical value in the range of 0...131071. Allows to set the period of the clock correction in seconds. At the correction moments, 1 second will be added or subtracted to the current time value according to the setting “Correction value, s”.

Correction value, s

Can take values: +1 or -1 second. In fact, determines the increase or decrease the current time at the correction moments of the controller clock.

Battery type

For the charger to work properly, you must specify the type of battery used. The battery built into the controller is of the type “Lithium-iron-phosphate LiFePO4 (12.8 V)”. If required, you can use an external battery with a larger capacity.

- **Lithium-iron-phosphate LiFePO4 (12.8 V)**
- **Lead-acid Pb (12 V; not less 3.5 Ah)**

Enable phone number linking to bot

If the parameter is checked, linking of the user phone number to the bot is enabled. To link the phone number, the controller sends the SMS with the verification code to the user. If all users of the controller are linked, it is recommended to disable this setting.

Enable GSM module firmware update mode

If the parameter is checked, switching to the GSM module firmware update mode is enabled. The process of updating the firmware of the GSM module is described in detail in the corresponding manual. It is required to enable this setting before updating and disable after updating.

Disable Touch Memory CRC check

If the parameter is checked, CRC checking of Touch Memory keys is not performed. This can be useful in cases when devices that emulate the Dallas 1-Wire DS1990A protocol, but do not comply with the CRC calculation specification, are used with the controller.

7.17 Configuration

This page allows to save the controller configuration to the file for creating the backup copy or for subsequent uploading to another controller.

Figure 62: “Configuration” page

Download

When clicking on the link, the configuration is downloaded from the controller and saved to the file with the name “ccu.cfg” in the special internal format. This feature can be useful for creating the backup copy of the configuration or for its subsequent uploading to another controller.

Safe reset

When clicking, the controller configuration is reset to the default values by the safe method. When using the safe reset, the minimum set of parameters of the current and first connections remains unchanged to maintain the ability to access the Internet. Parameters list: “Username”, “Password”, “Phone number”, “Connect to the Internet using https://ccu.sh”.

Full reset

When clicking, the controller configuration is reset to the default values. When using the full reset, all parameters are reset without exception.

Choose file

Allows to select the configuration file to upload.

Safe upload

When clicking, the selected configuration file is uploaded to the controller by the safe method. When using the safe upload, the minimum set of parameters of the current and first connections remains unchanged to maintain the ability to access the Internet. Parameters list: “Username”, “Password”, “Phone number”, “Connect to the Internet using https://ccu.sh”.

Full upload

When clicking, the selected configuration file is uploaded to the controller. When using the full upload, all parameters are replaced without exception.

Compare

When clicking, the selected configuration file is uploaded to the controller for compare without changing the controller configuration. The compare result will be shown at the end of the operation. The compare may be useful to identify differences between the reference configuration and the controller configuration.

7.18 Firmware

This page allows to update the controller firmware. Due to the transfer of a large volume data, updating the firmware is a slow process. A communication failure during the transfer of the firmware file cannot make the controller inoperable. In the case of connection failure or other problems in the process of updating firmware the controller will continue to work on the current firmware version. In this case, it is necessary to repeat the update procedure from the beginning.

Attention! When updating the firmware, the configuration can be reset to the default values, and voice messages and EXT program can be deleted! It is recommended to save configuration, voice messages and EXT program before updating.

Attention! If the configuration reset occurred while updating the firmware over the Internet, then to restore remote access to the controller, it is necessary to carry out the automatic controller setup to work over the Internet.

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HOUSE admin@863833020335055 Log out

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Firmware

Attention! When updating the firmware, the configuration can be reset to the default values, and voice messages and EXT program can be deleted! It is recommended to save [configuration](#), [voice messages](#) and [EXT program](#) before updating.

Attention! If the configuration reset occurred while updating the firmware over the Internet, then to restore remote access to the controller, it is necessary to carry out the automatic controller setup to work over the Internet.

Parameter	Controller	File
Controller type	CCU825	CCU825
Controller modification	PLC	HOME
Hardware version	12.03	12.03
Firmware version	02.20	02.20
Bootloader version	00.00	04.xx
Firmware build date	Aug 24 2019	Jul 11 2019
Language code	RUS	RUS
Serial number	13000018-AE492444-543CA91F-F50020C2	
IMEI	863833020335055	
GSM	GC10RCR02A07	
Extension board	E01.1	

Choose file
CCU825-HOME...3_b0400.bin

The chosen firmware is not compatible with this controller.

Update firmware

Figure 63: “Firmware” page

Controller and firmware file information table

The table displays the controller and firmware file information in a convenient form. If the firmware file is not compatible with this controller, incompatible fields will be marked in red. GSM module version is available only when the main power or battery is connected.

Choose file

Allows to select the firmware file to update.

Update firmware

When clicking, the firmware update process starts, which is performed in several stages and ends with the reboot of the controller. To monitor the successful completion of the firmware update, it is recommended to verify on the “Common” page that the controller firmware version matches the uploaded one.

7.19 Voice messages

The controller is supplied with the voice messages recorded at the factory. This page allows to listen to voice messages recorded in the controller and replace them if necessary.

Figure 64: “Voice messages” page

Display free memory

Displays the maximum total duration of audio recordings that can fit in the remaining free memory. This value is an estimate and may slightly differ from the real one.

Voice message selection

Allows to select the desired voice message from the list for actions on it. Missing voice messages are displayed in gray in the list, existing messages are displayed in black.

Download to play...

The first click on this button downloads the selected voice message to the computer’s memory. Subsequent clicks on this button will play the downloaded voice message.

Download selected

When clicking on the link, the selected voice message is downloaded from the controller and saved to the file in the WAV format.

Download all

When clicking on the link, all voice messages from the controller are downloaded and saved to the file with the SND extension in a special internal format. This feature can be useful for creating the backup copy of the voice messages or for subsequent uploading to another controller.

Delete selected

Clicking on this button deletes the selected voice message from the controller memory.

Delete all

Clicking on this button deletes all voice messages from the controller memory.

Choose file

Allows to select the file in the format WAV or SND to upload to the controller. It is allowed to use the WAV file format: PCM 8000 Hz; 16 bits; Mono. Voice messages recording can be done easily using the Audacity program.

Upload

When clicking, the upload process of the selected file starts. If the file in WAV format is selected, this file will be uploaded to the place of the selected voice message. If the file in SND format is selected, then all voice messages contained in it will be uploaded. In this case, if some voice messages in the SND file are missing, then they will not be changed in the controller.

7.19.1 Voice messages recording in the Audacity program

1. Download the Audacity program at <https://www.audacityteam.org/download/windows/> and install.
2. Start the Audacity program and set the project rate to 8000 Hz and recording mode to Mono.

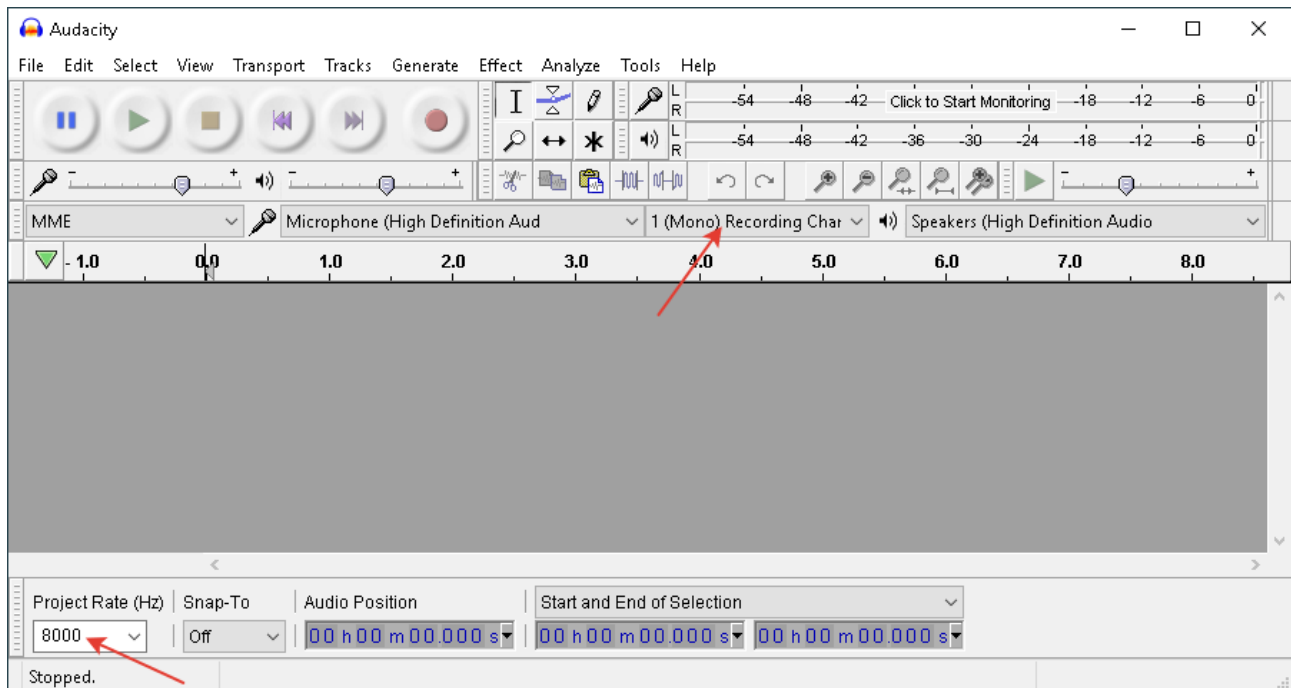


Figure 65: Setting the project rate and recording mode of the Audacity

3. Record the audio message through the microphone. Next, using the menu “File->Export->Export as WAV” open the export audio dialog. In the export dialog, set the file type to “WAV (Microsoft) signed 16-bit PCM”. Save file.

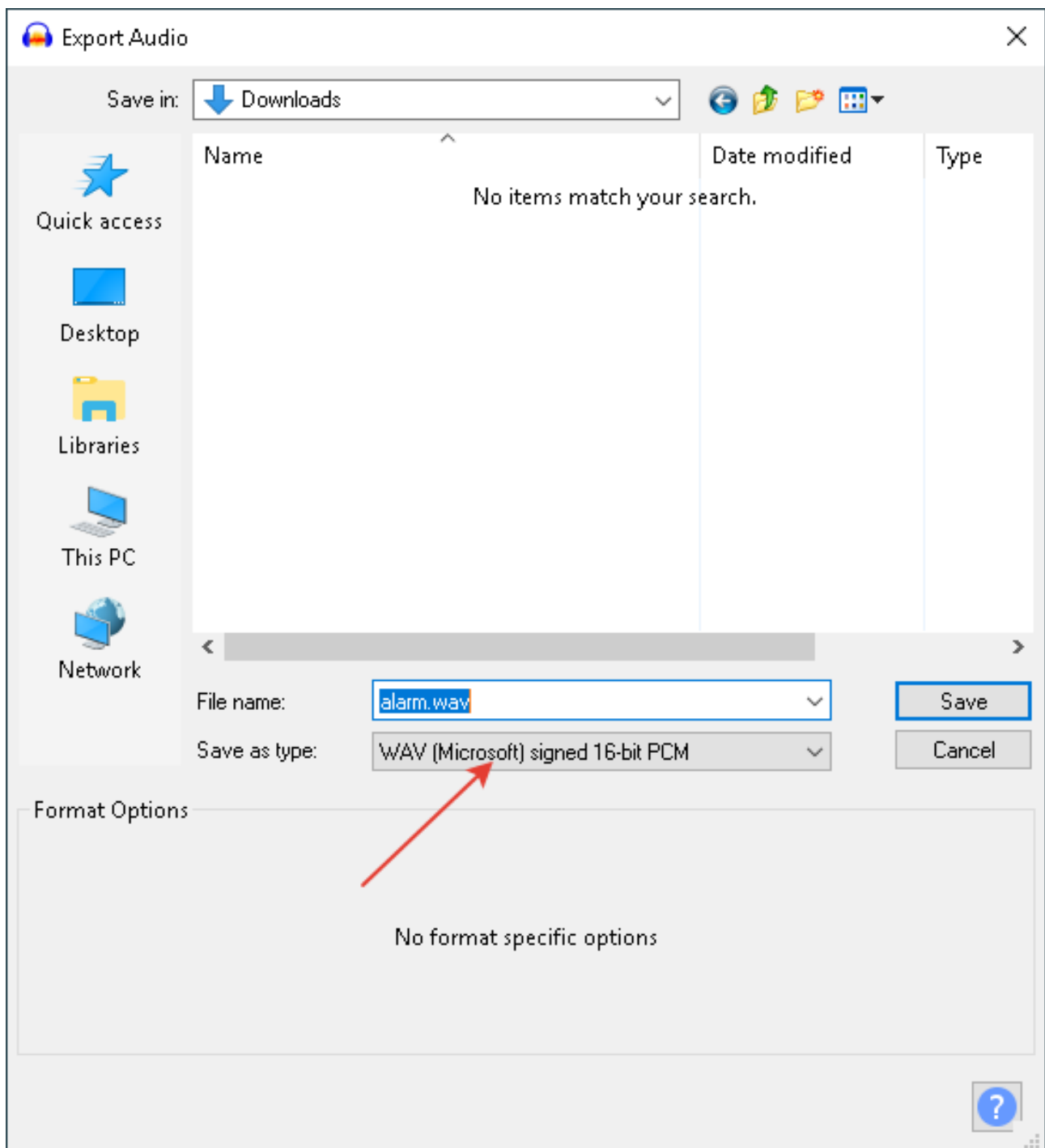


Figure 66: Export audio of the Audacity

4. Open the resulting WAV file in the configurator on the “Voice messages” page.

7.20 PLC

The PLC feature is intended to extend the functionality of the controller by writing your own programs in the simple EXT scripting programming language. This page contains all the necessary tools; installation of an additional software is not required. The EXT programming language is described in detail in the corresponding manual.

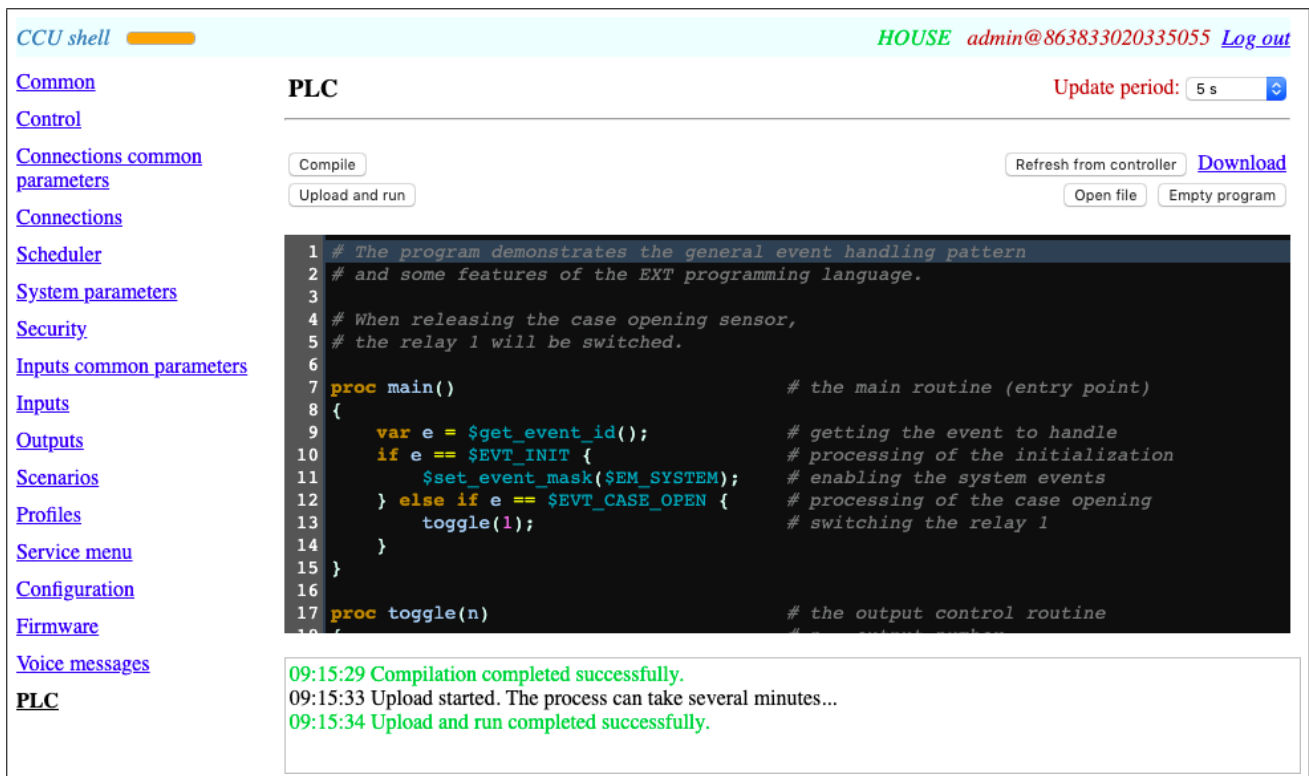


Figure 67: “PLC” page

Compile

When clicking, the program from the editor is compiled. The compilation result is displayed in the log. If errors were detected during the compilation of the program, it is necessary to fix them and repeat the compilation. The successful compilation does not upload the program into the controller! To run the program, use the “Upload and run” button.

Upload and run

When clicking, the successfully compiled program is uploaded into the controller and run. The result of this operation is displayed in the log. If the runtime errors occur, they are displayed in the area above the control buttons.

Refresh from controller

When clicking, the program is downloaded from the controller to the program editor. At the same time, all entered information is erased from the program editor.

Download

When clicking, the program is downloaded from the controller and saved to the file with the extension .ext. In this case, the information in the program editor remains unchanged. This feature can be useful for creating the backup copy of the program or for its subsequent uploading to another controller.

Open file

Allows to open the .ext file for loading into the program editor. At the same time, all entered information is erased from the program editor.

Empty program

Clears the program editor and fills it with the empty program.

Program editor

The program editor allows to write programs in the EXT language. The program editor supports full-screen mode. To enable full-screen mode, click on the program editor and press the key combination Ctrl+Enter. To disable full-screen mode, click on the program editor and press the key combination Ctrl+Enter or Esc.

Log

Displays the result of the compilation, uploading, running and other operations.

8 Control with Viber and Telegram

This function allows to inform users about the events and status of the controller and control the controller with Viber and Telegram on smartphones, tablets and PCs.

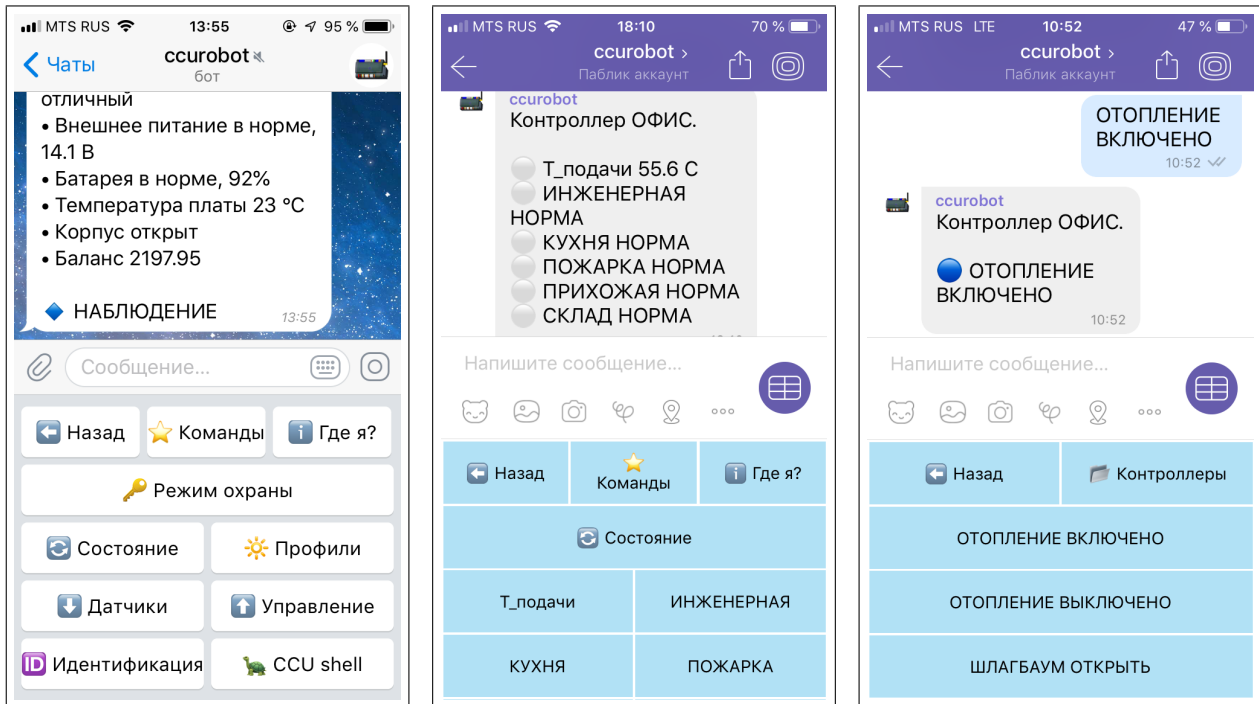


Figure 68: Examples of control with Viber and Telegram

CCU Shell

The “CCU Shell” menu item allows to quickly log in to the controller configurator without entering the username and password. When the button is clicked, the message with the temporary link comes to the messenger. When the link is clicked, the browser opens and you are automatically logged into the CCU Shell.

Commands

The menu item “Commands” is accessible from anywhere in the user interface of the bot, which allows quick access to frequently used commands. This menu item allows to display commands of the outputs control and profiles applying. To add to the commands you need to enable the settings:

- “Show switch on/off command in bot menu "Commands"” on the “Outputs” page;
- “Show in bot menu "Commands"” on the “Profiles” page.